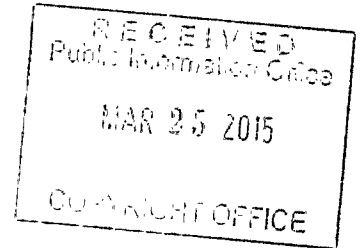


Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Library of Congress
Washington, D.C.

In re

DETERMINATION OF ROYALTY
RATES AND TERMS FOR
EPHEMERAL RECORDING AND
DIGITAL PERFORMANCE OF SOUND
RECORDINGS (*WEB IV*)

DOCKET NO. 14-CRB-0001-WR
(2016-2020)



**NOTICE OF SUBMISSION OF CORRECTED
WRITTEN REBUTTAL TESTIMONY OF DR. STEVEN R. PETERSON**

The National Association of Broadcasters ("NAB") and Pandora Media, Inc. ("Pandora") respectfully submit the attached Corrected Written Rebuttal Testimony of Steven R. Peterson (Ex. A), which makes the following minor corrections to Dr. Peterson's February 23, 2016 Written Rebuttal Testimony filed as part of NAB's and Pandora's Written Rebuttal Statements:

1. Paragraph 6 n. 6: a cited document was added.
2. Paragraph 46 n. 49: the Bates number was updated.
3. Heading V (after paragraph 79): "Do" was changed to "Does."
4. Paragraph 93, third line: "fully 25%" was changed to "24%."
5. Paragraph 98, sixth line: "\$4.50" was changed to "\$4.51."
6. Paragraph 102, fourth line from the bottom: "below" was changed to "above."
7. Paragraph 104, fourth line: "for" was inserted after "pay" and before "all."
8. Figure 5: the graph lines have not visibly changed, but Dr. Peterson made minor changes to his underlying calculations. The workpapers for these changes have been provided to SoundExchange and other parties.
9. Paragraph 108, third line from the bottom & Figure 12: "unlimited skips" was removed from the paragraph, and Figure 12 now includes "Unlimited skips" in the left-hand bar. Also in Figure 12, "Desktop On Demand" was added to each bar, "20 Millions Songs" was changed to

"20 Million Songs" in each bar, and the categories in the right-hand bar have been arranged to show the "value-added" categories largely above the \$0 line.

For the Judges' convenience, a redline showing the few minor corrections to the original testimony is also attached to this submission as Exhibit B.

March 24, 2015

Respectfully submitted,

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A

Before the
COPYRIGHT ROYALTY JUDGES
LIBRARY OF CONGRESS
Washington, D.C.

In The Matter Of:

Determination of Royalty Rates
for Ephemeral Recording and
Digital Performance of Sound
Recordings (*Web IV*)

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) 14-CRB-0001-WR (2016-2020)
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CORRECTED WRITTEN REBUTTAL TESTIMONY OF STEVEN R. PETERSON,
PH.D.

(On behalf of the National Association of Broadcasters and Pandora Media, Inc.

March 24, 2015

TABLE OF CONTENTS

I.	Introduction.....	1
A.	Qualifications.....	1
B.	Assignment	1
C.	Summary of Conclusions.....	1
	1. Conclusions Regarding Dr. Blackburn's Testimony	1
	2. Conclusions Regarding Dr. McFadden's Testimony.....	5
	3. Dr. Rubinfeld's "Interactivity Adjustment" Is Not Supported by Dr. McFadden's Results.....	5
II.	Dr. Blackburn's Suggestion that High Commercial Statutory License Fees Have Not Impeded Webcaster Growth Is Unfounded.....	7
A.	Webcasters Subject to Commercial Statutory Rates Exit the Webcasting Industry at a Greater Rate than Dr. Blackburn's Analysis Indicates	8
B.	Counts of Webcasters Cannot Demonstrate the Health of the Webcasting Industry	12
C.	Dr. Blackburn Overstates the Investment in Statutory Webcasting	16
III.	Dr. Blackburn's Analyses of Promotion and Purported Cannibalization Are Flawed.....	17
A.	The Opportunity Cost of Licensing a Stream of a Sound Recording Is a Key Factor in Assessing Competitive License Rates	17
B.	There is Substantial Evidence That Statutory Webcasting Promotes Music Sales	18
	1. There Is Substantial Evidence That Record Labels Treat Terrestrial Radio and Simulcasts as Promotional.....	18
	2. There Is Substantial Evidence that Plays on Custom Webcast Services Like Pandora Also Promote Music Sales	20
	3. Dr. Blackburn's Analysis of Promotion Is Incorrect and Contradicts His Testimony Regarding the Irrelevance of Correlation between Streaming and Sales	22

C.	Dr. Blackburn's Analysis of Purported Cannibalization of License Fees from Subscription Services Fails to Account for Alternative "Free" Sources of Music and Consumers' Low Willingness to Pay for Music Services	23
1.	Dr. Blackburn's Analysis of Substitution between Statutory Streaming Services and Subscription On-Demand Services Is Particularly Inapplicable to Simulcasts of Terrestrial Radio	24
2.	Dr. Blackburn's Analysis of the Substitution of Custom Webcasting for Subscription Services Fails to Account for Consumers' Options That Are Closer Substitutes for Subscription On-Demand Services than Custom Webcasting	25
IV.	Dr. Blackburn's Discussion of Webcasters Delaying Profits to Invest in Market Share Does Not Provide an Economic Justification for a Rate Increase	28
V.	Dr. McFadden's Analysis Demonstrates that Many Consumers Have a Low Willingness to Pay for Streaming and Does Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"	30
A.	Dr. McFadden's Results Show That a Significant Share of Consumers Have Low Willingness to Pay for Streaming	30
B.	Dr. McFadden's Results Do Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"	37

Written Rebuttal Testimony of Steven R. Peterson, Ph.D.

I. Introduction

A. Qualifications

1. My name is Steven R. Peterson. I am an Executive Vice President at Compass Lexecon. Compass Lexecon is an economics consulting firm that specializes in the economics of competition, finance, and regulation, among other areas. I received my A.B. in economics from the University of California, Davis, in 1987 and my Ph.D. in economics from Harvard University in 1992. While at Harvard, my areas of specialization were economic theory and industrial organization. Industrial organization is the study of the interactions of firms that are able to strategically influence their environments. Industrial organization includes the study of market power and anticompetitive conduct. I have also served as an adjunct faculty member in the Department of Economics at Northeastern University, teaching courses on government and business and energy economics & policy.
2. During my career, I have consulted on the economics of antitrust and competition, mergers, estimation of damages, and the economics of valuation, and on regulation and public policy. I have also worked in the area of intellectual property and have testified on market power issues arising from the licensing of intellectual property. A copy of my curriculum vitae is attached as Appendix A.
3. Compass Lexecon is being compensated for my time in this matter at the rate of \$725/hour. My compensation does not depend in any way on the outcome of this proceeding.

B. Assignment

4. Counsel for the National Association of Broadcasters and counsel for Pandora Media, Inc., have asked me to analyze certain aspects of the written direct testimony offered by Dr. Blackburn and Dr. McFadden. Specifically, I have been asked to comment on Dr. Blackburn's analysis of the streaming marketplace and to assess the implications of Dr. McFadden's survey analysis for establishing license fees at issue in this proceeding. In particular, I have been asked to evaluate whether Dr. McFadden's results corroborate Dr. Rubinfeld's calculation of the "interactivity adjustment" Dr. Rubinfeld uses to adjust benchmark non-statutory interactive license fees. A list of the materials I and my staff have reviewed and relied upon in the course of preparing this report is attached as Appendix B.

C. Summary of Conclusions

1. Conclusions Regarding Dr. Blackburn's Testimony

5. Dr. Blackburn claims that webcaster entry and survival rates show that the statutory webcasting industry is healthy and that it is unlikely that commercial statutory license

rates are “choking off growth.”¹ Dr. Blackburn’s conclusions are based on unsound economic reasoning and lack evidentiary support. The economic errors in his analysis include the following:

- a. The standard that Dr. Blackburn uses to assess the reasonableness of rates, that rates not “choke off” growth, is economically meaningless. Even if rates were set at monopolistic levels, they would not “choke off” all growth. Thus, Dr. Blackburn’s analysis based on this standard does not provide any economic basis to find that prevailing license rates – or SoundExchange’s proposed rates – are economically reasonable or reflect the workings of an effectively competitive market.
- b. Dr. Blackburn’s webcaster counts and analysis of survival rates cannot support his conclusions regarding commercial statutory rates because they include hundreds of webcasters who pay only the minimum license fees or are subject to rates that are significantly below commercial statutory rates. When Dr. Blackburn’s analysis is limited to types of webcasters generally paying per-performance or usage rates at or near the commercial statutory rates, both webcaster counts and survival rates decrease. When properly analyzed, Dr. Blackburn’s data show that commercial statutory license fees are associated with a higher risk that a webcaster will cease webcasting than the survival rates that Dr. Blackburn presents.
- c. Analysis of the growth of webcasting using SoundExchange’s payment data illustrates that the greatest growth in webcasting has occurred not from webcasters paying commercial statutory rates but from so-called pureplay webcasters, which pay rates that are substantially below those paid by other commercial webcasters. Even there, substantially all of the growth has been attributable to [REDACTED]
[REDACTED]
[REDACTED].
- d. Dr. Blackburn’s reliance on a purported increase in webcasters from 1,412 in 2006 to 2,516 in 2013² is economically meaningless. Dr. Blackburn provides no benchmark against which to gauge whether this growth is consistent or inconsistent with the growth that would occur in an effectively competitive market, so no economic conclusion can be drawn from these counts. In any event, Dr. Blackburn’s count of 2,516 webcasters includes over 1,100 webcasters that only rarely pay usage rates at or near the commercial statutory rates because they generally pay minimum license fees or are subject to usage rates below the commercial statutory rates. Thus, the counts of webcasters actually paying rates at or near the commercial statutory rates are far lower than the counts that Dr. Blackburn presents.
- e. Finally, Dr. Blackburn overstates the amount of investment in statutory webcasting.³ Of the \$839 million number he cites, only about half relates to Internet radio as

¹ Report of David Blackburn, October 6, 2014 (hereinafter “Blackburn”), ¶ 27 and ¶ 55.

² Blackburn, ¶ 26.

³ Blackburn, ¶ 21.

opposed to on-demand and video services, and of this half, approximately 90% relates to a single public offering of Pandora stock. A still higher percentage was raised by firms that are not responsible for paying full commercial statutory performance rates.

6. Dr. Blackburn's claim that "there is little evidence that statutory webcasting promotes the sales of digital or physical media" is incorrect.⁴ In fact, there is extensive evidence that statutory webcasting, including both simulcasts of AM/FM radio broadcast programming and customized webcasting services like Pandora, is promotional.
 - a. The documentary record in this matter shows that streaming and AM/FM radio are important sources of music discovery for listeners.⁵ Moreover, financial records indicate that the record labels for which SoundExchange produced data spend [REDACTED] a year promoting music on AM/FM radio and encouraging AM/FM stations to play their artists' music.⁶ This level of expenditure indicates industry expenditures of [REDACTED]. The labels would only make these expenditures if they believed they provide a positive return. Moreover, there is no reason to claim that the promotional benefits of AM/FM radio are lost when a listener chooses to listen to the same programming online rather than over the air.
 - b. There is also substantial evidence that custom webcasting services, like Pandora, are promotional. This evidence includes both [REDACTED] as well as a well-controlled experiment that Pandora performed that shows that playing songs on Pandora causally leads to increased average music sales. In fact, the study Pandora performed uses an approach Dr. Blackburn endorses.⁸
7. Dr. Blackburn's analysis purporting to show that statutory webcasting cannibalizes revenue from subscription streaming is flawed. Dr. Blackburn's analysis rests on the suggestion that if ad-supported statutory webcasters were less attractive, many of the listeners leaving them would sign up for services with a monthly fee.⁹ His analysis, however, does not account for other sources of competition to both free custom services

⁴ Blackburn, ¶ 89.

⁵ See, e.g., [REDACTED].

⁶ See SNDEX0282314-2318, SNDEX0126178-179, SNDEX0126596-600, SNDEX0126597, SNDEX0126592-595, SNDEX0126601, and SNDEX0126177.

⁷ See, e.g., [REDACTED].

⁸ Blackburn, ¶ 91 ("one should conclude, as an economic matter, that statutory webcasting leads to additional sales of recorded music only if there are sales made ... that would not have otherwise been made, absent the streaming. That is, if the play(s) did not happen, there would have been fewer sales.").

⁹ Blackburn, ¶ 99.

like Pandora and to subscription streaming services. The presence of these competing services means that those leaving custom webcasting need not subscribe to a service and that there are other services more likely to cannibalize subscription services than custom webcasters. Thus, Dr. Blackburn's analysis is [REDACTED].

Dr. Blackburn also fails to account for evidence that many users of custom webcasting could switch to terrestrial radio should custom webcasting disappear or be degraded.¹¹ Finally, Dr. Blackburn does not take into account that many consumers are quite averse to paying monthly subscription fees and have a low willingness to pay for music. These consumers are unlikely to subscribe to a service with a monthly fee.

8. Dr. Blackburn's claims regarding competition between statutory streaming and subscription services are particularly inapplicable to radio broadcasters that simulcast their terrestrial broadcasts – a significant segment of statutory webcasting that Dr. Blackburn all but ignores. Simulcasts are not customized and offer the same or substantially identical programming to the programming offered on the corresponding over-the-air radio broadcast. As such, a simulcast service resembles terrestrial radio much more closely than a subscription on-demand service – or even custom webcasting. Dr. Blackburn himself recognizes this fundamental distinction.¹²
9. Dr. Blackburn suggests Internet startups, such as Pandora, intentionally delay their profitability and could increase profitability if desired. This claim is contrary to basic economic principles and cannot provide economic support for a rate increase. A rational, profit-seeking firm will not “delay” profitability. Dr. Blackburn offers no evidence that Pandora has not acted to maximize its profits or has acted sub-optimally, leaving money on the table. Moreover, cost increases always lead to reduced profitability and lower incentives to invest in the future. Thus, any suggestion that a firm, such as Pandora, could increase its profitability in order to cover increased costs without damaging its business and future prospects for achieving already uncertain expected profits is economically unfounded.

¹⁰ [REDACTED].

¹¹ Written Direct Testimony of Simon Fleming-Wood, ¶ 15 (“our [Pandora’s] closest competitor, and greatest opportunity for converting new listeners, is the broadcast radio industry - including traditional terrestrial (AM/FM) radio, and satellite radio.”).

¹² Blackburn, ¶ 101.

2. Conclusions Regarding Dr. McFadden's Testimony

10. Dr. McFadden estimates the average willingness to pay for a number of characteristics and features of interactive and non-interactive services based on a survey of 983 individuals. The survey required respondents to perform 15 choice tasks in which they chose among three hypothetical streaming services with different prices and features. Using these responses, Dr. McFadden estimated each respondent's willingness to pay for each feature. From those estimates, he computed an estimate of the weighted average willingness to pay of the respondents. As Dr. McFadden notes, the survey results reveal that a significant portion of respondents to his survey have a low willingness to pay for streaming.¹³ In fact, Dr. McFadden's study shows that many respondents do not just have a low willingness to pay for many features of music streaming, they have a *negative willingness to pay for many features* (i.e., these respondents prefer services without these features). Of course, estimates of the average willingness to pay for features can never describe individual behavior, which is driven by the individual variation around the average. This is particularly the case here. The estimates of the average willingness to pay for features are all positive, which indicates that individuals will be willing to seek out and pay for features. Many of the individual estimates of willingness to pay for features, however, indicate an aversion by some respondents to those features. Thus, the average masks the divergent willingness to pay of consumers.
11. The estimates of average willingness to pay cannot provide insight into market prices or how consumers will respond to market prices. In fact, the estimated average willingness to pay for the features of an on-demand subscription service (as estimated by Dr. McFadden) is lower than the typical \$9.99 price of a subscription service, even accounting for all of the features included in music service. Of course consumers will pay only for the features of a service that they cannot obtain for free in the marketplace. If everyone had the average willingness to pay for the features of a service such as Spotify Premium, nobody would subscribe to such a service at the typical subscription price of \$9.99. Only a relatively small cohort of consumers who value the features of subscription streaming services substantially above the estimated average levels would be willing to pay \$9.99. Thus, the estimates of average willingness to pay for features of streaming services are not a useful guide to consumer behavior or market price levels.

3. Dr. Rubinfeld's "Interactivity Adjustment" Is Not Supported by Dr. McFadden's Results

12. Dr. Rubinfeld calculates an "interactivity adjustment" based on the ratio of the average retail subscription prices of interactive and statutory non-interactive services.¹⁴ Dr. Rubinfeld uses the "interactivity adjustment" to adjust downward the license fees paid by his benchmark interactive services to the license fees he proposes for statutory non-interactive licensees. Dr. Rubinfeld explains that the purpose of his adjustment is to ensure that per-person license fees are about the same share of retail subscription prices

¹³ McFadden, ¶ 10.

¹⁴ Rubinfeld, ¶ 168.

for both interactive and non-interactive licensees.¹⁵ I understand that the flaws with this approach are discussed in detail in the Written Rebuttal Testimony of Michael Katz (among others).

13. Dr. Rubinfeld asserts that Dr. McFadden's estimates of consumers' willingness to pay for the characteristics of interactive versus non-interactive services are "generally consistent" with the "interactivity adjustment" he calculates from retail market prices.¹⁶ What he appears to mean by this is that the willingness to pay for the features of an interactive service (as calculated by Dr. McFadden) is roughly double the willingness to pay for the features of a non-interactive service. This result purportedly supports his calculation because it is approximately equal to the retail-price ratio defining his "interactivity adjustment." Despite the similar numerical results, Dr. McFadden's estimates of willingness to pay cannot corroborate Dr. Rubinfeld's calculation for two reasons. First, the arithmetic of Dr. Rubinfeld's license fee adjustment has solely to do with the relationship between subscription prices and license fees for statutory and interactive services. On its face, it has nothing to do with the average willingness to pay for features of streaming services, which are not economically related to retail subscription prices. Obviously, if estimates of average willingness to pay are unrelated to market prices, there is no reason for the *ratio* of willingness to pay and the *ratio* of prices for interactive and statutory non-interactive services to be the same. Any similarity is fortuitous. In any event, the fact that the two calculations yield a similar numerical result does not imply that Dr. McFadden's results support Dr. Rubinfeld's calculation of an "interactivity adjustment" or that Dr. Rubinfeld's use of the "interactivity adjustment" is economically justified.
14. Second, Dr. Rubinfeld's two calculations of the "interactivity adjustment" value different bundles of features. Many of the features that form part of the package sold by subscription services – for example large song libraries and mobile service – are available for free in the marketplace. The retail prices of the subscription services that Dr. Rubinfeld uses represent the market value of the features that are *not* available for free in the marketplace – that is, the "extras" that one gets for subscribing that are not included in the free service. What Dr. Rubinfeld's retail subscription price ratio reveals, therefore, is the ratio of what consumers pay for the "extras" available from a non-interactive subscription service (lack of advertising, for example) to what they pay for the even larger group of extra features available from an interactive subscription service (mobile on-demand song choice, most notably). When calculating the willingness to pay for an interactive service relative to a statutory non-interactive service using estimates of average willingness to pay, Dr. Rubinfeld did not just use the values of the "extras" one gets by subscribing, but the willingness to pay for all of the features embodied in the services, whether they are available for free in the market or not.¹⁷ This is a broader and fundamentally different set of features than those reflected in the retail prices Dr. Rubinfeld uses to estimate the "interactivity adjustment." That the two methods, which

¹⁵ Rubinfeld ¶ 169.

¹⁶ Rubinfeld, ¶ 171.

¹⁷ Rubinfeld, Exhibit 14.

value different sets of features, produce roughly the same results is pure happenstance. One calculation cannot support the other.

15. Dr. Rubinfeld uses Dr. McFadden's analysis solely to support the calculation of the "interactivity adjustment." Dr. McFadden's analysis cannot provide the support Dr. Rubinfeld claims, however. As a result, Dr. McFadden's analysis is not relevant to SoundExchange's rate proposal.

II. Dr. Blackburn's Suggestion that High Commercial Statutory License Fees Have Not Impeded Webcaster Growth Is Unfounded

16. Dr. Blackburn asserts that the streaming industry is experiencing entry by new webcasters and has further prospects for growth.¹⁸ He also asserts that once they enter, webcasters have a good probability of survival (*i.e.*, not failing and exiting the industry).¹⁹ Based on his findings, Dr. Blackburn concludes: "[i]f licensing rates were choking off growth, we would not likely see continued growth in the number of firms operating in the industry, or the historical success of firms to survive once they have entered."²⁰ To the extent Dr. Blackburn means to defend the existing rates – or SoundExchange's even higher rate proposal – on the grounds that the rates will not "choke off growth" in statutory webcasting, that conclusion is both economically irrelevant and factually baseless.
17. Dr. Blackburn's standard deems rates to be acceptable if they are not "choking off growth." Notably, Dr. Blackburn does not claim that the growth in webcasting is unaffected by license rates or that higher license rates do not slow growth relative to lower rates. Instead, he represents only that there is growth in the number of webcasters, but this observation alone is economically meaningless. Moreover, I understand that the purpose of this proceeding is to identify rates that approximate the rates that a willing buyer and willing seller would negotiate in an effectively competitive marketplace – not to set the rate at the highest level possible that will not "choke off" growth or avoid driving services out of business. Of course, rates that do not "choke off growth" need not be effectively competitive or otherwise reasonable. Monopolists raise prices above the competitive level, sometimes materially so, but they do not raise prices to levels that drive all of their customers away. Even a monopolist setting license fees would not raise them high enough to entirely choke off growth in an otherwise growing industry. "Choking off" all growth would effectively kill the geese that lay the golden eggs.

¹⁸ Blackburn, ¶ 17.

¹⁹ Blackburn, ¶ 28.

²⁰ Blackburn, ¶ 27.

A. Webcasters Subject to Commercial Statutory Rates Exit the Webcasting Industry at a Greater Rate than Dr. Blackburn's Analysis Indicates

18. Dr. Blackburn claims that "licensing costs in the industry have not deterred growth,"²¹ and suggests that current rates are reasonable because "over the recent past, survival rates for statutory webcasters have generally been right in line with those of all businesses more generally."²² In making these claims, however, he incorrectly examines survival rates of *all* webcasters rather than those types that generally pay rates at or near the commercial statutory rates, which is the relevant analysis. An analysis of the relevant set of webcasters reveals survival rates that are much lower than those that Dr. Blackburn presents.
19. As an initial matter, Dr. Blackburn offers no analysis to support his conclusion that webcasters should have survival rates that are in line with businesses generally. There is no reason to believe that statutory webcasters face the same risks of failure as firms generally. Thus, the comparison of webcaster survival rates to the survival rates of businesses generally cannot provide insight into the effects of high commercial statutory rates.
20. Moreover, Dr. Blackburn incorrectly analyzes as a single group different types of webcasters that pay many different types of rates, including hundreds that pay rates that are significantly lower than the commercial statutory rates. For example, Dr. Blackburn incorrectly includes noncommercial webcasters in his survival analysis. The statutory rates for these webcasters permit streaming of no more than 159,140 aggregate tuning hours per month without requiring additional payment beyond a \$500 minimum annual fee,²³ and most noncommercial webcasters stream at levels low enough that this fixed amount is all they pay.²⁴ Above that threshold, the statutory rates require noncommercial webcasters to pay the same commercial usage rates as those that apply to commercial webcasters or broadcasters.²⁵ According to SoundExchange's payment data, however, while some noncommercial webcasters exceed the stated threshold, [REDACTED] pay commercial usage rates.²⁶ In 2012, for example, [REDACTED] noncommercial [REDACTED] paying usage rates paid the commercial webcaster usage rates. In 2013, [REDACTED] noncommercial [REDACTED] paid statutory rates above the \$500 minimum fee, paying total fees of \$[REDACTED]. Instead, almost all of these somewhat larger noncommercial

²¹ Blackburn, ¶ 25.

²² Blackburn, ¶ 28.

²³ 37 C.F.R. §§ 380.3(a)(2)(i), 380.22(b).

²⁴ See, e.g., Blackburn, ¶ 29.

²⁵ 37 C.F.R. §§ 380.3(a)(2)(ii), 380.22(b).

²⁶ SNDEX0049480 (NAB Ex. 41).

²⁷ SNDEX0049480 (NAB Ex. 41).

webcasters pay usage rates that are available under a Webcaster Settlement Act agreement²⁸ and are a fraction of the commercial usage rates.²⁹

21. In addition to including noncommercial webcasters in the survival rate analysis, Dr. Blackburn also incorrectly includes pureplay and small webcasters, which pay rates that are substantially below the commercial statutory rates.³⁰ Of course, if the goal is to find out whether license fees at or near the commercial statutory rates are leading to low survival rates, it is necessary to focus on webcasters that are paying rates at or near the commercial statutory rates that are at issue here. Thus, by combining all webcasters regardless of the rates they generally pay, Dr. Blackburn has done the wrong analysis.
22. It is also not clear that Dr. Blackburn has used reliable data for his survival analysis. Dr. Blackburn conducts his survival analysis on a highly processed dataset where judgments have been made regarding webcasters' identities and whether they should be considered to still be in operation. Without information on how these judgments were made, there is no way to ascertain the reliability of the data. Notably, the data on the names and types of webcasters present in the survival data match SoundExchange's payment data relatively well for the period 2010-2012. However, a substantial number of firms that appear in the survival data in 2013 do not appear in the payment data, indicating they did not pay license fees in 2013. In addition, for the years 2007-2009, there are many webcaster names in the payment data that do not appear in the survival data and vice versa. Moreover, the license types for webcasters in the survival data are different than those shown for the same webcasters in the payment data, when a match can be found. Dr. Blackburn has provided no information on the methods used to create the dataset used for his survival analysis, particularly for the years 2007-2009 where the survival data are a poor match to payment data. Without information describing how the survival data have been manipulated, it is not possible to validate the survival data prior to 2010 using SoundExchange's payment data.
23. If we use the same data Dr. Blackburn used but correct the analysis so that it includes only types of webcasters generally paying usage rates at or near the commercial statutory webcaster rates, we find that these webcasters are less likely to survive than Dr. Blackburn's analysis shows. This result is shown in Figure 1. The top panel of Figure 1 reproduces Table 3 from Dr. Blackburn's testimony. The panel shows "the survival rates,

²⁸ Federal Register /Vol. 74, No. 40 /Tuesday, March 3, 2009 /Notices at 9293-9307.

²⁹ SNDEX0049480 (NAB Ex. 41). Dr. Rubinfeld suggests, in the absence of benchmark agreements applicable to noncommercial broadcasters to continue the existing rates, a \$500 minimum fee and commercial rates for webcasting beyond the aggregate tuning hour cap (Rubinfeld, ¶ 246). The payment history of the noncommercial webcasters, however, indicates that Dr. Rubinfeld's proposal does not, in fact, continue the status quo.

³⁰ Many webcasters pay SoundExchange under a settlement agreement covering their webcasting activities. Thus, many webcasters have not and do not pay precisely the rates described in the Web II or Web III proceedings. By "rates near commercial statutory rates," I mean rates that are approximately at the statutory level for commercial webcasters established in the Web II and Web III proceedings. These webcasters are broadcasters, small broadcasters, commercial webcasters (CRB), and commercial webcasters (WSA).

by year, for statutory webcasters operating in any given year.”³¹ For example, the top row shows that of the webcasters operating in 2006, 39% were still operating in 2013.

Figure 1
Correction of Dr. Blackburn’s Survival Analysis

Recreation of Dr. Blackburn's Table 3: Webcaster Licensee Rate of Survival until 2013
(2006-2013)

	2006	2007	2008	2009	2010	2011	2012	2013
2006	100%	87%	61%	53%	43%	42%	42%	39%
2007		100%	68%	60%	46%	45%	44%	41%
2008			100%	82%	61%	58%	56%	53%
2009				100%	72%	66%	64%	58%
2010					100%	86%	81%	75%
2011						100%	89%	79%
2012							100%	85%
2013								100%

Recreation of Dr. Blackburn's Table 3 for Types of Webcasters Paying At or Near the
Commercial Statutory Rate

	2006	2007	2008	2009	2010	2011	2012	2013
2006	100%	85%	57%	44%	30%	27%	27%	25%
2007		100%	66%	53%	34%	32%	31%	28%
2008			100%	77%	49%	45%	43%	40%
2009				100%	63%	57%	54%	48%
2010					100%	85%	79%	70%
2011						100%	87%	75%
2012							100%	82%
2013								100%

Source: Sndex0049482-Restricted.xlsx; Federal Register, Vol. 74, No 40, March 3, 2009; Federal Register, Vol. 74, No. 154, August 12, 2009; Federal Register, Vol. 72, No. 83, May 1, 2007, Federal Register, Vol. 74, No. 136, July 17, 2009

Notes: 1) Webcaster types paying at or near the commercial statutory usage rate include entities under the "BRD", "CW-CRB", "CW-WSA", "SMBRD", and "PPWC"-Subscription license subtypes.

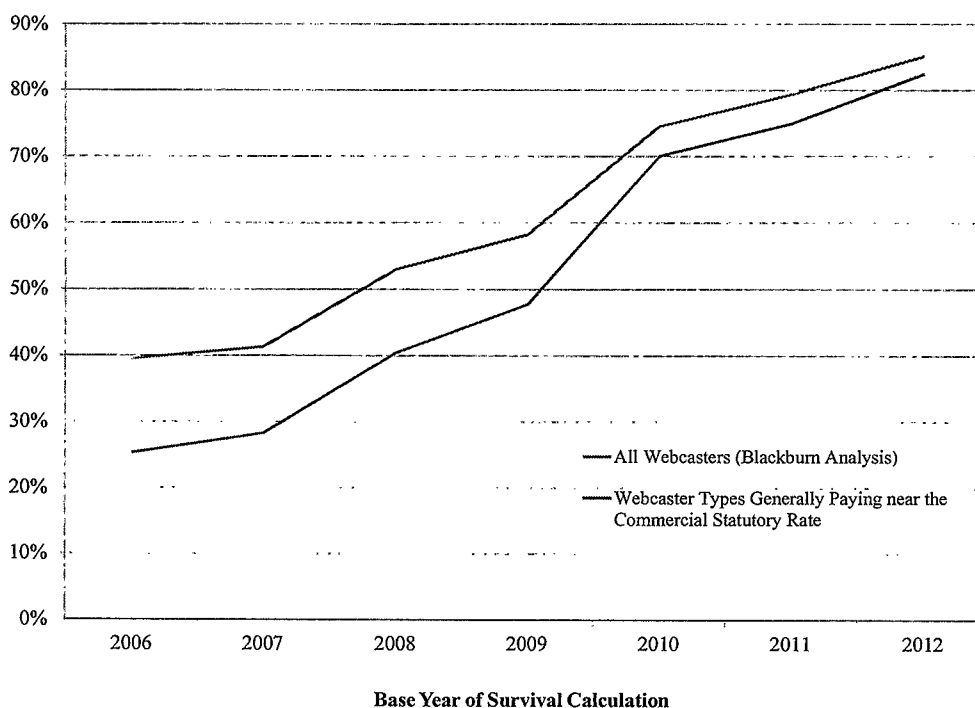
24. The bottom panel of Figure 1 shows Dr. Blackburn’s survival analysis limited to the types of webcasters that pay usage rates at or near the commercial statutory rates.³² Note that with the exception of the first entry in each row, every entry in the middle panel of Figure 1 is lower than the corresponding entry in the top panel showing Dr. Blackburn’s analysis. This indicates that the survival rate for webcasters paying rates at or near the commercial statutory rate survive at lower rates (*i.e.*, fail at higher rates) than webcasters generally.
25. Figure 2 compares the survival rates in 2013 of webcasters paying at or near the commercial statutory rate and of all webcasters as calculated by Dr. Blackburn. The figure shows that types of webcasters paying at or near commercial statutory usage rates

³¹ Blackburn, ¶ 27.

³² Some webcasters of these types pay minimum license fees.

(blue line) survive at a lower rate than Dr. Blackburn reports for all webcasters (red line). The lines are farther apart to the left of the chart where firms have had a longer time to fail, and the higher failure rate has more years to compound before the end of the dataset in 2013. With fewer years for the different failure rates to influence survival, the lines grow closer together as they move to the right.

Figure 2
2013 Survival Rate Comparison: Types of Webcasters Paying At or Near the Commercial Statutory Rate v. Dr. Blackburn's Analysis of All Webcasters
 2006-2012



Source: Sndex0049482-Restricted.xlsx; Federal Register, Vol. 74, No 40, March 3, 2009; Federal Register, Vol. 74, No. 154, August 12, 2009; Federal Register, Vol. 72, No. 83, May 1, 2007; Federal Register, Vol. 74, No. 136, July 17, 2009.

26. Dr. Blackburn's analysis of webcaster survival rates incorrectly combines webcasters paying approximately commercial statutory rates and webcasters paying minimum license fees and usage rates below commercial statutory rates. The survival rates of these two groups are different. However, only the survival of webcasters paying license fees at or near the commercial statutory rates can possibly tell us about the effects of the commercial statutory rates on webcaster survival. Therefore, Dr. Blackburn's analysis of all webcasters blended together is not applicable to commercial broadcasters and webcasters and overstates the survival rates of the relevant types of webcasters.
27. More importantly, however, Dr. Blackburn's analysis is not economically relevant to establishing rates that are effectively competitive. Effectively competitive rates are not

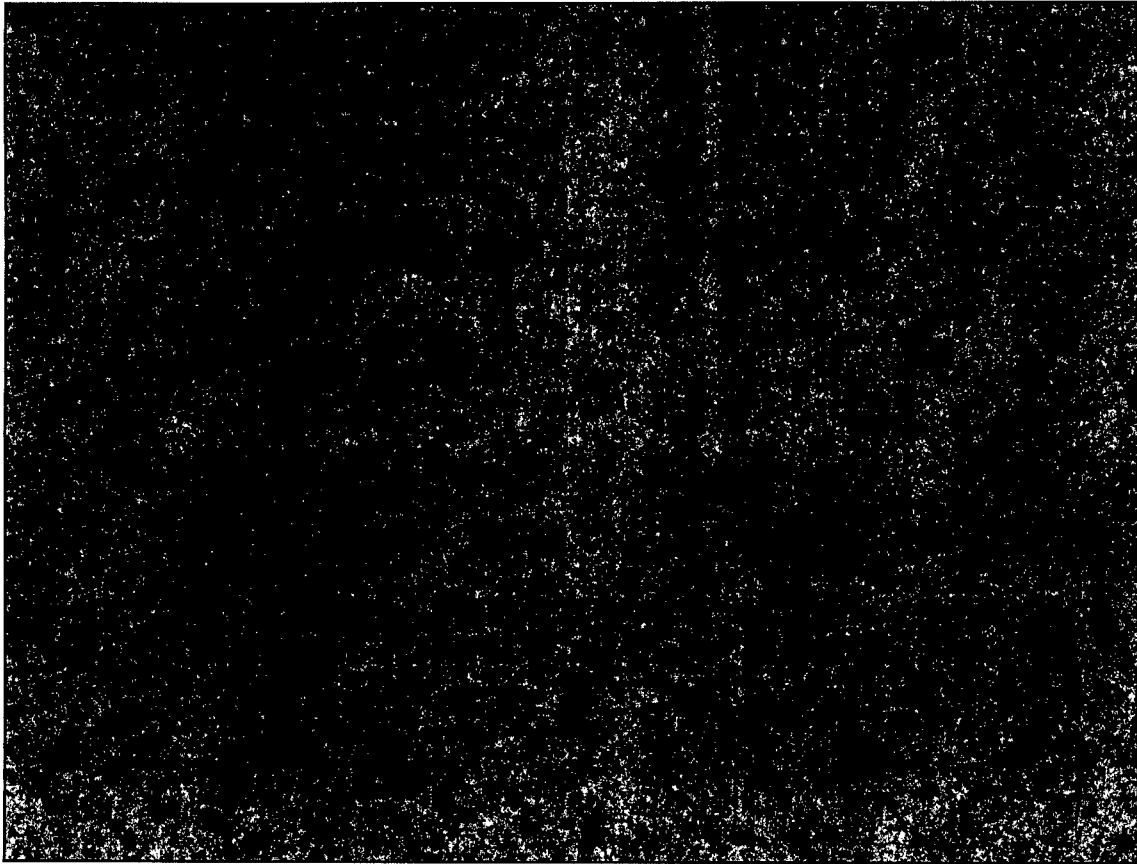
rates that are sufficiently low to not choke off growth. Effective competition would drive rates toward the copyright owners' marginal cost of allowing webcasts to occur.

B. Counts of Webcasters Cannot Demonstrate the Health of the Webcasting Industry

28. Dr. Blackburn touts the fact there has been growth in the number of statutory webcasters according to SoundExchange's counts.³³ He suggests that the rate of entry of webcasters and the increasing number of webcasters supports his conclusion that high license fees are not choking off growth in the industry.³⁴ Dr. Blackburn's analysis cannot support his conclusions, however. Statements such as "[a]t the end of 2013, there were 2,516 webcasters operating under statutory license, up from 1,412 in 2006" are meaningless without comparison to some benchmark. Dr. Blackburn's analysis does not tell us whether 2,516 webcasters are a lot of webcasters or a few webcasters relative to the number that would exist if rates were effectively competitive. Thus, 2,516 webcasters may sound like a lot of webcasters, but with no benchmark for comparison, Dr. Blackburn's analysis provides no way to know how many webcasters there should be.
29. Dr. Blackburn's analysis of webcaster counts also fails to account for differences among webcasters. Only an analysis of webcasters paying roughly the commercial statutory usage rate can provide insight into the effects of that rate on webcasters. Limiting the analysis to these types of webcasters reduces Dr. Blackburn's tally of webcasters by more than 1,100.
30. Figure 3 illustrates that different types of webcasters are not equally important in terms of their contribution to SoundExchange's royalty revenue from statutory webcasters. For each type of webcaster, the figure shows the share of license fees paid to SoundExchange and the share of all webcasters that the type represents. If each type of webcaster paid the overall average level of license fees, the bars showing the share of license fees and the share of webcasters would be the same height for each type of webcaster. This is clearly not the case because different types of webcasters pay different usage rates and some types of webcasters have relatively few streams and generally pay only the minimum license fee. The figure shows noncommercial webcasters account for 41% of webcasters by licensee count, but only [REDACTED]% of license fees – not 41% of license fees. Broadcasters account for 37% of all webcasters, and pay about [REDACTED]% of license fees to SoundExchange. By contrast, [REDACTED] of statutory license fees are paid by non-subscription pureplay webcasters, and [REDACTED].

³³ These counts rely on the same dataset as Dr. Blackburn's survival analysis and, therefore, are subject to the same issues of data reliability described above.

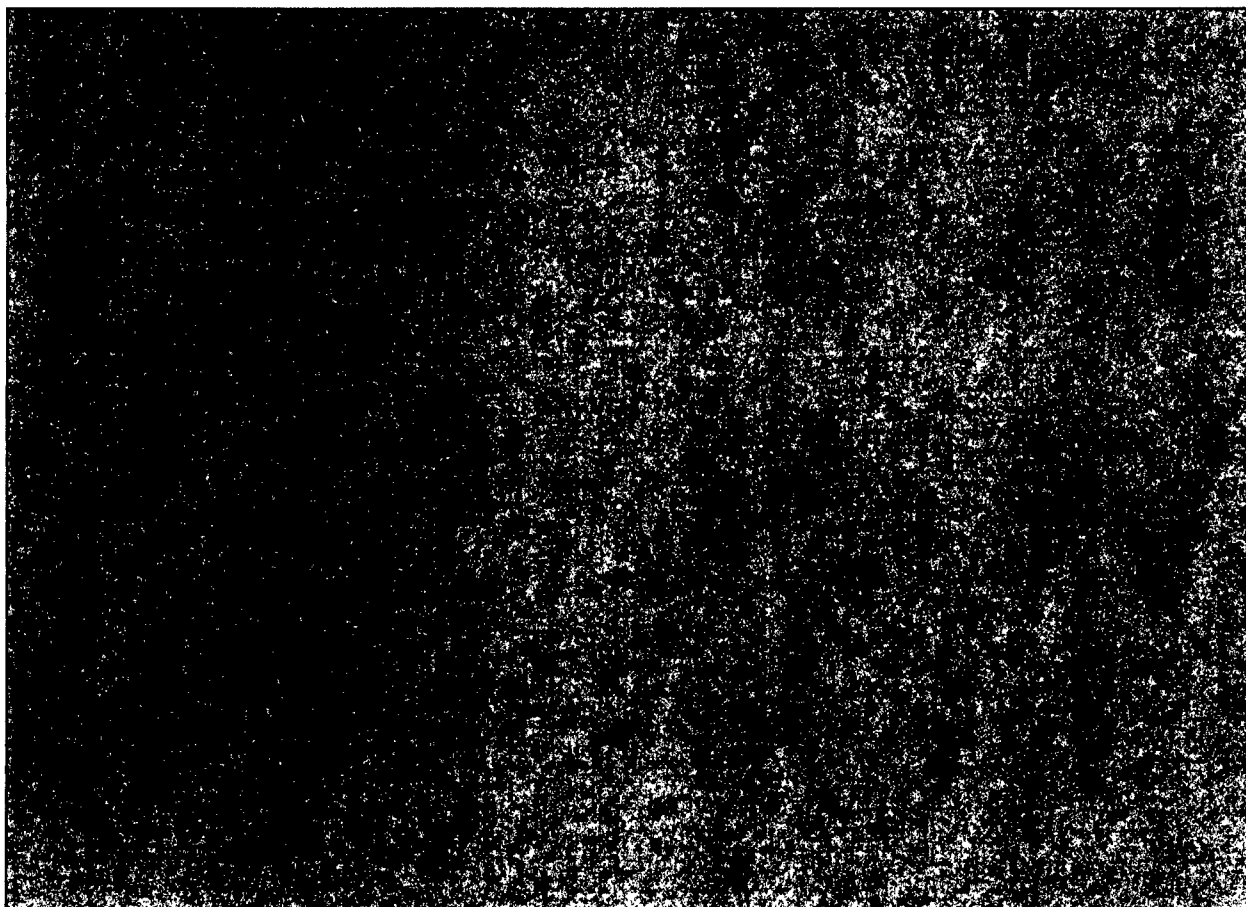
³⁴ Blackburn, ¶ 26.



Source: Sndex0049480-Restricted.xlsx (NAB Ex. 41); Sndex0049482-Restricted.xlsx

Note: 1) Broadcasting includes BRD; commercial webcasting includes CW-CRB and CW-WSA; noncommercial webcasting includes NC-MICRO, NCEDW, NC-CRB, NC-WSA, and CPB; subscription pureplay includes PPWC (Sub); non-subscription pureplay includes PPWC (Non-Sub), PPWC (Non-Sub & Sub), and PPWC (Sub and Non-Sub); small webcasting includes SMPPWC, SMW, and SWSA; small broadcasting includes SMBRD license subtypes. Excludes other types of licenses.

31. Figure 3 shows that looking at webcaster counts alone presents a highly misleading picture of the statutory webcasting industry because the bulk of royalties are paid by a small share of webcasters – and primarily by non-subscription pureplay webcasters that pay royalties at rates substantially below commercial statutory rates. In contrast, many of the entrants that Dr. Blackburn describes are noncommercial webcasters, which pay a very small share of total license fees.
32. Figure 4 shows the license fees paid by seven types of webcasters between 2007 and 2013. It is clear that license fees paid by non-subscription pureplay webcasters grew at a much greater rate than did license fees paid by other types of webcasters. This suggests that the increase in webcasting is primarily the result of growth by commercial webcasters paying rates substantially below the commercial statutory rates rather than by those generally paying at or near the commercial statutory rates.



Source: Sndex0049480-Restricted.xlsx (NAB Ex. 41); Sndex0126123_Restricted.xlsx (NAB Ex. 42)

Notes: 1) For years 2007-2009, broadcasting includes BRD-I; commercial webcasting includes CW-CRB, CW-II; noncommercial webcasting includes NC MICRO-II, NCW, NCEDW-II, NCW-II, NCW-CRB, and CPB; subscription pureplay includes PPWC-II (SUB); non-subscription pureplay includes PPWC-II (NON-SUB), and PPWC-II (SUB & NONSUB); small webcasting includes SPPWC-II (NON-SUB), SPPWC-II (SUB), SPPWC-II (SUB & NONSUB), and SWSA; small broadcasting includes SMBRD-I. Excludes other types of licenses.

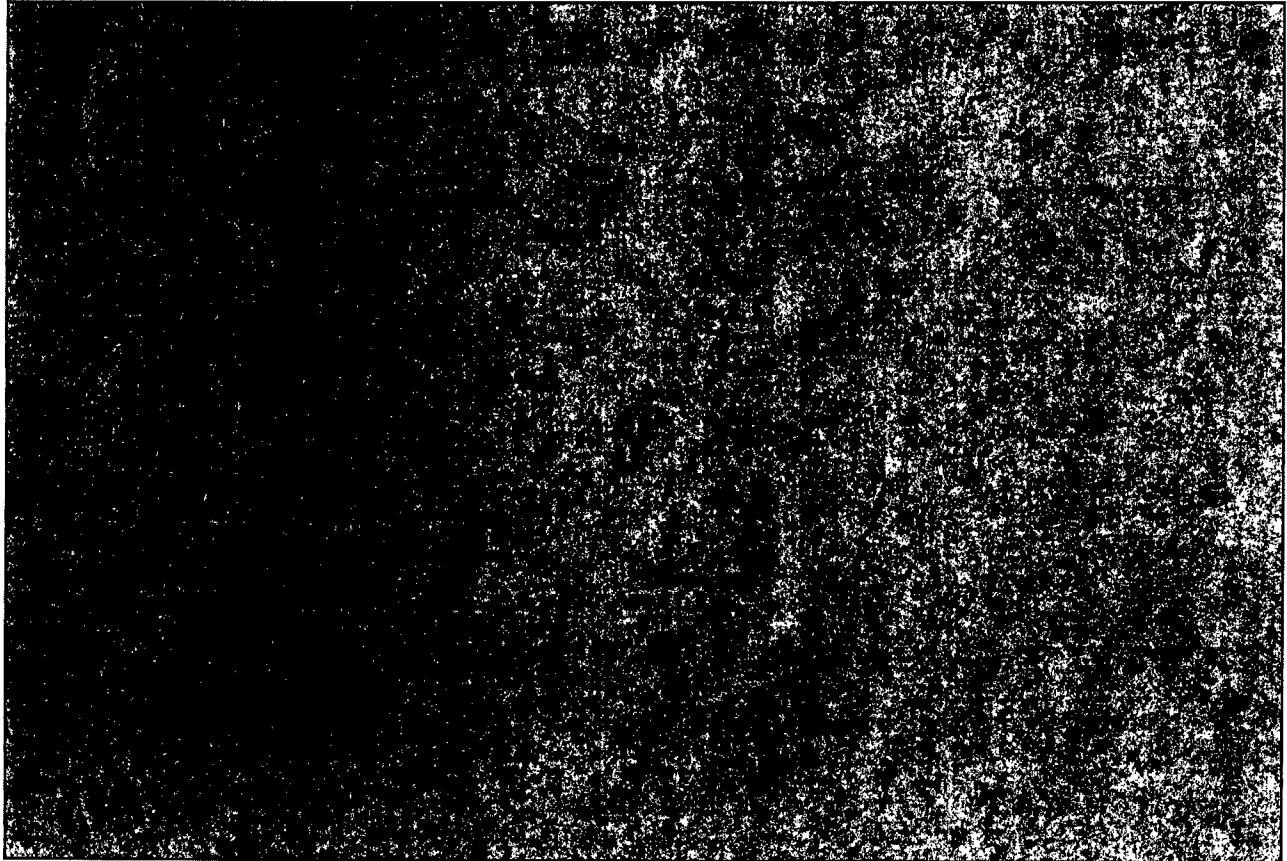
2) For 2010-2013, Broadcasting includes BRD; commercial webcasting includes CW-CRB and CW-WSA; noncommercial webcasting includes NC-MICRO, NCEDW, NC-CRB, NC-WSA, and CPB; subscription pureplay includes PPWC (Sub); non-subscription Pureplay includes PPWC (Non-Sub); small webcasting includes SMPPWC, SMW, and SWSA; small broadcasting includes SMBRD. Excludes other types of licenses.

33. Of course, a substantial portion of the increase in license fees paid between 2007 and 2013 is the result of increased license rates, which generally increased each year for webcasters subject to a usage rate. Thus, the increases in license fees in Figure 4 represent a combination of increased license rates and increased output of webcasting. Figure 5 removes the impact of increasing license rates and shows what license fees would have been for the categories of webcasters making relatively larger license payments had license rates remained at their 2007 levels, all else equal.³⁵ Thus, the

³⁵

Figure 5 shows adjusted fees only for the four largest types of webcasters.

increases shown in the figure are the result of increased streaming rather than the result of increased license rates. Notably, the increases in streaming by the types of webcasters that are subject to the commercial statutory rates had a much smaller increase in webcasting than did pureplay webcasters, which had the greatest increases in the quantity of webcasting.³⁶ Once again, there are a few non-subscription pureplay webcasters, but [REDACTED].



Source: Sndex0049480-Restricted.xlsx (NAB Ex. 41); Sndex0126123_Restricted.xlsx (NAB Ex. 42); Federal Register, Vol. 74, No 40, March 3, 2009; Federal Register, Vol. 74, No. 154, August 12, 2009; Federal Register, Vol. 72, No. 83, May 1, 2007, Federal Register, Vol. 74, No. 136, July 17, 2009

Notes: 1) For 2007-2009, broadcasting includes BRD-I; commercial webcasting includes CW-CRB and CW-II; subscription pureplay includes PPWC-II (SUB); non-subscription pureplay includes PPWC-II (NON-SUB) PPWC-II (SUB & NONSUB) license subtypes.

2) For 2010-2013, broadcasting includes BRD; commercial webcasting includes CW-CRB and CW-WSA; subscription pureplay includes PPWC (Sub); non-subscription pureplay includes PPWC (Non-Sub) license subtypes.

³⁶

Subscription pureplay webcasting has also grown rapidly from a very low base in 2007. Nevertheless, subscription pureplay webcasting contributes far less in royalty payments to SoundExchange than non-subscription pureplay webcasting. This growth is attributable to [REDACTED]. Blackburn, ¶ 98.

34. When we examine a measure of webcaster output growth that is economically meaningful, the analysis shows that the vast majority of the increase in webcasting occurred in a segment of webcasting with rates substantially below the statutory rates applicable to broadcasters and commercial webcasters. This result is contrary to Dr. Blackburn's conclusion that high license fees are not choking off webcasting growth.

C. Dr. Blackburn Overstates the Investment in Statutory Webcasting

35. Dr. Blackburn also tries to demonstrate the health of the webcasting industry by discussing the amount of investment in webcasting, but the investment amount he cites is misleading. Based on a trade press article, Dr. Blackburn notes: "[l]ast year, investors placed \$2.4 billion in the music industry with about \$839 million going into 'Internet Radio' or 'On-demand streaming audio and video' companies, including stock offerings by Pandora and venture capital rounds from other streaming services."³⁷
36. Of course, the only relevant investment for assessing investor interest in statutory webcasting is the amount invested in statutory webcasters, and according to the article that Dr. Blackburn cites, only \$432 million of the \$839 million he quotes was invested in "Internet Radio," with the rest going to on-demand audio and video companies. Of the \$432 million, almost all of it – \$393 million – reflected a secondary stock offering in a single company, Pandora. Of course, Pandora pays a royalty rate that is substantially below the current commercial statutory rate.
37. The remaining \$39 million consisted of "smaller venture capital rounds by TuneIn (\$25 million), DeliRadio (\$9.4 million) and Songza (\$4.7 million)". The article notes that TuneIn is an aggregator of Internet radio streams and does not pay any royalties itself.³⁸ Therefore, the investment in TuneIn does not indicate much about investor's views regarding royalty rates because it does not pay them. In addition, DeliRadio's website includes a section entitled "Streaming music royalties" that states: "Artists with streaming-enabled music on DeliRadio have given us royalty-free licenses to stream that music, in exchange for the suite of promotional tools we offer to artists for free".³⁹ Again, investment in a company that does not pay statutory royalties is uninformative regarding investors' views regarding the impact of statutory royalty rates on a business' financial performance. Thus, virtually all of the investment amount cited by Dr. Blackburn was in companies that do not pay the statutory rates.
38. It is also relevant to assess whether the investments have paid off. Pandora completed its secondary public offering in September 2013. With Pandora's secondary offering more than a year behind us, we can investigate how well the investors in that offering have done. Through its secondary public offering, Pandora sold 15,730,000 shares at a price

³⁷ Blackburn, ¶ 21.

³⁸ Glenn Peoples, "Investors Put \$2.4 Billion into Music in 2013, Streaming Tops List," Billboardbiz, January 31, 2014, available at <http://www.billboard.com/biz/articles/news/5893800/investors-put-24-billion-into-music-in-2013-streaming-tops-list> (accessed February 15, 2015).

³⁹ <http://deliradio101.com/for-artistsbands/streaming-music-royalties> (accessed February 22, 2015).

of \$25 per share. As a result of the offering, Pandora raised net proceeds of \$387.7 million.⁴⁰ Following the secondary offering, Pandora's share price increased up to a peak of \$39.43 on March 5, 2014 (and was at \$36.07 when the article Dr. Blackburn cites was written) and has since decreased to approximately \$15 per share in February 2015.⁴¹ The investors who participated in the secondary offering and have held their Pandora stock have seen their investment decrease by nearly \$10 per share (a 40% decline) since they made their investment. Thus, the largest of the relevant investments that Dr. Blackburn touts has not performed well.

III. Dr. Blackburn's Analyses of Promotion and Purported Cannibalization Are Flawed

39. Dr. Blackburn's analyses of promotion and purported cannibalization are flawed. An important factor in determining rates is the cost to the copyright holder of allowing a digital performance. This cost is driven, in part, by the degree to which a digital performance cannibalizes other revenue streams and by the size of the promotional benefit the performance provides to the copyright holder. Dr. Blackburn ignores the substantial evidence found in the documents, testimony, and record labels' behavior indicating that digital performances by statutory webcasters promote music sales. Dr. Blackburn attempts to use evidence of a negative correlation between streaming and music sales to bolster his claims, but his own testimony concerning economic standards confirms that correlations of the kind he offers are economically meaningless. In addition, Dr. Blackburn's analysis of statutory streaming's purported cannibalization of license fees from subscription services does not account for alternative "free" sources of music – both AM/FM terrestrial radio and pirated sources. These alternatives mean that a customer leaving a webcaster need not choose to subscribe to an interactive music service with a fee. By ignoring these options, Dr. Blackburn's analysis incorrectly suggests that a consumer's choice is between webcasting and an interactive subscription service. Dr. Blackburn also fails to account for consumers' low willingness to pay. A consumer that uses a free service has indicated by his behavior that he is likely to have a low willingness to pay for music. A consumer with a low willingness to pay is unlikely to choose a costly alternative in the event custom webcasting is degraded or eliminated when a host of alternative free sources of music are available.

A. The Opportunity Cost of Licensing a Stream of a Sound Recording Is a Key Factor in Assessing Competitive License Rates

40. I agree with Dr. Katz's view that license rates for the digital performance of sound recordings should reflect the outcome that would "happen in an effectively competitive market in the absence of the statutory licensing regime."⁴² The hallmark of an effectively competitive marketplace is that competition will tend to drive license fees toward marginal cost. A potentially important component of the cost to the copyright owner (record company) of allowing a webcaster to transmit a recording is the degree to which

⁴⁰ Pandora 2014 Annual Report, at 42.

⁴¹ Yahoo! Finance, Pandora Stock Price Chart.

⁴² Written Direct Testimony of Michael L. Katz, October 7, 2014, p 3.

the transmission, or “play,” will tend to increase or decrease the copyright owner’s revenue from other sources of distribution. For example, in a world with only streaming and digital downloads, the reduction in profit from reduced digital sales of a recording resulting from allowing it to be streamed would be included in the competitive license fee for streaming the recording. If, however, streaming the recording promotes sales, the cost to the record company of allowing the song to be streamed is negative, and competition may force the record company to pay webcasters to stream its recording.

41. As described below, Dr. Blackburn’s testimony presents arguments suggesting that statutory webcasting cannibalizes record labels’ other revenue from subscription webcasting services and does not promote music sales. The economic implication is that high license fees are appropriate. Dr. Blackburn’s discussion ignores significant relevant evidence that demonstrates the opposite of his claims.

B. There is Substantial Evidence That Statutory Webcasting Promotes Music Sales

42. Dr. Blackburn claims there is “little evidence that statutory webcasting promotes the sales of digital or physical media.”⁴³ As described below, even this weak claim is incorrect. [REDACTED] provide substantial evidence of promotion by terrestrial radio broadcasts and simulcasts. In addition, Pandora has performed an experiment that demonstrates that its plays promote music sales, and the record labels’ documents show that Pandora promotes physical and digital music sales, confirming Pandora’s analysis. Moreover, Dr. Blackburn himself provides no economic evidence indicating otherwise. Thus, contrary to Dr. Blackburn’s assertion, there is substantial evidence that statutory webcasting is promotional.

1. There Is Substantial Evidence That Record Labels Treat Terrestrial Radio and Simulcasts as Promotional

43. Notably, Dr. Blackburn focuses on custom webcasters such as Pandora, rather than radio simulcasting, when suggesting that webcasting is not promotional. As described below, there is substantial evidence that terrestrial radio broadcasts promote music sales. Moreover, the content of terrestrial broadcasts and simulcasts is typically the same and has the same lack of customizability. Thus, there is no economic basis to assert that the promotional benefit of a broadcast differs depending on whether the consumer listens online or over the air. In either case, the content of the broadcast will generally be the same, indicating the promotional benefit of the broadcast will be the same.
44. There is no doubt that the record labels treat terrestrial radio as promotional. Rand Levin, Senior Vice President, Business and Legal Affairs for Universal Music Group, states: “[p]eople who work in promotion departments try to get their label’s artists played on terrestrial radio, in the hope that increased plays could help lead to increased record sales. In other words, almost everything these employees do ‘relates’ in some sense to the

⁴³ Blackburn, ¶ 89.

possibility that terrestrial radio plays could positively affect record sales.”⁴⁴ Paul M. Robinson, Executive Vice President and General Counsel of Warner Music Group, gives similar information on the work of promotion departments. “Generally speaking, the people in a promotion department focus on promoting releases by that label’s artists through terrestrial radio. Therefore, much of what promotional employees do in their daily work could be said to ‘relate to’ the possibility of terrestrial radio performances having a positive effect on record sales.”⁴⁵ The labels would not engage in such costly activity if it did not generate additional music sales.

45. [REDACTED] terrestrial radio is an important source of promotion for record labels and explain why terrestrial radio promotes sales. Surveys and studies of music users show that AM/FM radio has a high rate of use by music listeners in all age groups. In addition, [REDACTED] AM/FM radio is an important method for listeners to learn about new music. About two-thirds of listeners report that the main or an important reason to listen to AM/FM radio is to discover new music.⁴⁷ Another study finds that [REDACTED]
46. When a record label releases an album, it develops a marketing plan for that album. Marketing plans frequently include a plan to market the album or sound recording using terrestrial radio. The labels’ promotion departments will often encourage stations to play the sound recording and provide a copy of the sound recording or album to stations. Promotions may also involve meeting with the artist and giveaways and contests for prizes such as concert tickets. [REDACTED] the labels seek to promote their artists through terrestrial radio.
47. The record labels have repeatedly recognized the importance of terrestrial radio to the success of their music. In fact, Charles Walk, Executive Vice President of Republic Records, a division of Universal Music Group, described the value of terrestrial radio to the record labels, stating that [REDACTED]

⁴⁴ Declaration of Rand Levin, November 20, 2014, ¶ 7 (NAB Ex. 37).

⁴⁵ Declaration of Paul M. Robinson, November 20, 2014, ¶ 13 (NAB Ex. 39).

⁴⁶ See, e.g., [REDACTED].

⁴⁷ [REDACTED].

⁴⁸ [REDACTED].

⁴⁹ SoundExchange, Inc.’s Responses and Objections to the First Set of Interrogatories from the Licensee Participants, response to Interrogatory 7 at 14 (NAB Ex. 43). For instances of the use of AM/FM radio for promotion of albums, see, e.g., [REDACTED].

]]⁵⁰ and]]

]]⁵¹ Other record label executives echo this view. Gary Overton, Chairman and CEO of Sony Music Nashville, reportedly tells his “staff several times a day” that “[i]f you are not on country radio, you don’t exist.”⁵² Thus, there is little doubt that the record labels view airplay on AM/FM radio to be an important contributor to the success of their artists’ music.

48. The importance of airplay on AM/FM radio is underscored by the expenditures that the labels make to promote their artists’ music on AM/FM radio. Financial records from some of the major record labels demonstrate they spend [] dollars per year promoting music on AM/FM radio. If these expenditures are scaled up to reflect the entire industry based on market shares, the implied total industry expenditure is []. If record labels did not view radio play as promoting sales of sound recordings and albums, they would have no incentive to devote such substantial resources to obtaining radio play of their sound recordings.

2. There Is Substantial Evidence that Plays on Custom Webcast Services Like Pandora Also Promote Music Sales

49. Even when one considers only the custom webcasters on which Dr. Blackburn focuses, there is ample evidence that these services also promote music sales. For example, a Nielsen study finds

]] analysis that examines the [] A []

I.

50. Pandora has addressed the question of whether plays on Pandora promote or cannibalize music sales by carrying out a well-designed randomized controlled trial to test the promotional value of playing songs on Pandora.⁵⁵ Statisticians have developed the

⁵⁰ Deposition of Charles Walk, February 20, 2015 (hereinafter “Walk Deposition”), at 11-12.

⁵¹ Walk Deposition, at 26 (emphasis added).

⁵² Nate, Rau, “Sony Nashville CEO talks importance of country radio,” *The Tennessean*, February 21, 2015, available at <http://www.tennessean.com/story/money/industries/music/2015/02/20/sony-nashville-ceo-talks-importance-country-radio/23768711/> (accessed February 22, 2015).

⁵³ Nielsen, Music 360 US, October 2013, NAB00006637-6745, at 44.

⁵⁴ I.]]

⁵⁵ Written Direct Testimony of Stephan McBride, October 14, 2014 (hereinafter “McBride Testimony”).

randomized controlled trial as a method for estimating exactly this kind of causal effect. Randomized controlled trials are recognized as the appropriate way to test the efficacy of drugs and medical devices.⁵⁶ Furthermore, randomized controlled trials are recognized in economics for estimating causal effects.⁵⁷ In a medical randomized controlled trial, patients are randomly assigned to either the treatment group or the control group.⁵⁸ The result of the randomization is that the only systematic difference between the two groups is whether or not the patients received the treatment, so any observed difference in outcome between the treatment and the control group can be attributed to the causal effect of the treatment. By computing the difference in average outcomes between the two groups, the statistician can estimate the average causal effect of the treatment.⁵⁹

51. In Pandora's randomized controlled trial, metropolitan areas were randomly assigned to either one group for which a tested track would be played (the treatment group) or to another group for which the track would not be played (the control group).⁶⁰ Pandora tested whether sales of the new releases and catalog tracks were higher or lower in the metropolitan areas where they were played relative to the areas where they were not played. This experimental framework was repeated for a number of different randomly selected tracks, across a number of different time periods. Moreover, the geographic randomization varied for each selected track. Pandora carefully designed the experiment so that there would be sufficient information from the experiment to reliably and accurately estimate the promotional or diversionary impact from playing songs on Pandora.
52. The results of Pandora's experiment show that sales of the songs used in the experiment were higher, on average, in the areas where the songs were streamed relative to the areas where they were not streamed.⁶¹ These results were statistically significant, meaning that the promotional impacts were unlikely to be due to random chance. This experiment

⁵⁶ Joshua D. Angrist and Jorn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricists Companion*, March 2008.

⁵⁷ James H. Stock and Mark W. Watson, *Introduction to Econometrics*, (Boston: Addison Wesley, 2003), Chapter 11.

⁵⁸ In many economic experiments, it is not possible for the experiment to be "blind," meaning the subjects do not know whether they are assigned to the control or treatment group. In this case, listeners to Pandora did not know whether they were in a treatment or a control group. Thus, the Pandora study has the additional feature of being a blind study, which means the subjects' knowledge of the study cannot influence the results.

⁵⁹ This approach is in fact consistent with Dr. Blackburn's own observation that "one should conclude, as an economic matter, that statutory webcasting leads to additional sales of recorded music only if there are sales made ... that would not have otherwise been made, absent the streaming. That is, if the play(s) did not happen, there would have been fewer sales." Blackburn ¶ 91.

⁶⁰ The randomization was based on geographic regions because the outcome of interest, music sales, is available for geographic regions. Pandora used SoundScan which tracks unit sales (both digital and physical) for most music sold in the US to measure sales. I understand SoundScan is also widely used by the music industry to track sales.

⁶¹ McBride Testimony, Table 3.

provides strong evidence that plays of songs on Pandora promote the sales of digital and physical recordings. Moreover, Pandora's results are consistent with surveys and [REDACTED].

3. Dr. Blackburn's Analysis of Promotion Is Incorrect and Contradicts His Testimony Regarding the Irrelevance of Correlation between Streaming and Sales

53. Dr. Blackburn has provided no economic evidence that counters the substantial evidence of promotion discussed above. While Dr. Blackburn recognizes that mere correlation between streaming and music sales cannot show a meaningful economic relationship,⁶² the evidence that Dr. Blackburn presents on the question of promotion amounts to nothing more than the suggestion of a negative correlation between streaming and music sales. The economic standard he espouses indicates that the evidence he offers is meaningless.
54. Dr. Blackburn dismisses evidence of positive correlation between streaming and music sales with the standard argument that correlation is not evidence of causation. Thus, according to Dr. Blackburn, evidence of music downloads made through links on webcasters sites are not evidence of promotion, only of a correlation between a play and increased overall sales.⁶³ Under Dr. Blackburn's view that correlation does not imply causation, the positive correlation between streaming and digital music sales between 2005 and 2013, as shown by the backup to Dr. Blackburn's Figure 8, is also presumably not evidence that streaming promotes sales.⁶⁴
55. Despite rejecting mere correlation as evidence of promotional impact, however, Dr. Blackburn relies on just such evidence when attempting to argue that streaming is *not* promotional. For example, Dr. Blackburn presents evidence that increased streaming by Pandora is associated with a decline in digital music sales between 2012 and 2013⁶⁵ and evidence of a negative correlation between streaming and digital music sales in the first half of 2013 and the first half of 2014.⁶⁶ Dr. Blackburn's "evidence," however, amounts to nothing more than examples of correlation that are, by his own standard, not evidence of causation.
56. Not only does this evidence fail to demonstrate that increased streaming *caused* reduced music sales, it is evident that Dr. Blackburn had to sift through the data on streaming and music sales to find narrow time windows that would actually show a negative correlation rather than a positive one. Dr. Blackburn's data show that over the longer term, the relationship between streaming and digital music sales has been positive, not negative. The negative correlation that Dr. Blackburn attempts to use as evidence that streaming

⁶² Blackburn, ¶ 91 and footnote 107.

⁶³ Blackburn, ¶ 91.

⁶⁴ Blackburn, ¶ 91 and footnote 107.

⁶⁵ Blackburn, ¶ 90.

⁶⁶ Blackburn, ¶ 92.

cannibalizes music sales is cherry picked from a larger amount of data that shows the opposite relationship. Dr. Blackburn's purported evidence that streaming cannibalizes digital music sales is meaningless.

57. Dr. Blackburn also quotes a Billboardbiz article to support his assertions regarding promotion.⁶⁷ Dr. Blackburn claims the article "explains that iTunes Radio was disappointing in terms of digital download sales"⁶⁸ and failed to "prevent a decline in sales."⁶⁹ Statements about disappointing music sales associated with iTunes Radio and the fact that iTunes Radio failed to prevent a decline in music sales are not evidence of a lack of promotion from iTunes Radio specifically or from statutory webcasting more generally. According to Dr. Blackburn, the relevant question is whether exposure to songs through iTunes Radio led to music sales "through referral links or otherwise" that would not have occurred "absent the streaming."⁷⁰ Dr. Blackburn's discussion of the introduction of iTunes Radio fails to address what the level of music sales would have been absent the additional plays associated with the introduction of iTunes Radio. Dr. Blackburn's anecdote regarding iTunes Radio is economically meaningless.
58. Dr. Blackburn's cherry-picked examples of negative correlation between streaming and music sales cannot support the conclusion that statutory streaming is not promotional. They certainly cannot overcome the evidence described above showing that streaming, including simulcasting, is promotional.

C. Dr. Blackburn's Analysis of Purported Cannibalization of License Fees from Subscription Services Fails to Account for Alternative "Free" Sources of Music and Consumers' Low Willingness to Pay for Music Services

59. In addition to Dr. Blackburn's claim that webcasters cannibalize sales, Dr. Blackburn asserts, without empirical analysis, that statutory webcasters compete directly with subscription streaming services and cannibalize more lucrative record label revenues from those subscription services as a result.⁷¹ Dr. Blackburn concludes that "if Pandora were not available, or if it were less attractive to the user (perhaps because it had more advertising spots per hour, for example) it would stand to reason that users who would otherwise use Pandora would be more likely to use Spotify or purchase digital audio tracks as an alternative."⁷²
60. Of course, the question is not whether some Pandora listeners would be more likely to use subscription on-demand services if Pandora were not available or were degraded. The question is *how many* users might switch to subscription on-demand services. Dr.

⁶⁷ Blackburn, ¶ 93.

⁶⁸ Blackburn, ¶ 93.

⁶⁹ Blackburn, ¶ 89.

⁷⁰ Blackburn, ¶ 91.

⁷¹ See, e.g., Blackburn, ¶ 97.

⁷² Blackburn, ¶ 99.

Blackburn's analysis stops well short of providing any indication of how many users might subscribe to a service with a fee should Pandora be degraded. If only a relatively small share of Pandora users would shift to a subscription service should Pandora be degraded with the remainder going to other free and non-royalty-paying services (e.g., terrestrial radio or pirate sites that offer on-demand characteristics), the direct conclusion is that the opportunity cost to the labels of a "play" on Pandora is quite low or even negative when promotional effects are considered.

61. Notably, Dr. Blackburn does not suggest that terrestrial radio or simulcasts of terrestrial radio cannibalize subscription streaming service revenue. In fact, he and others recognize that digital simulcasts are not close substitutes for subscription on-demand services.⁷³ Thus, there is little likelihood that digital simulcasts cannibalize revenue from subscription services.

1. Dr. Blackburn's Analysis of Substitution between Statutory Streaming Services and Subscription On-Demand Services Is Particularly Inapplicable to Simulcasts of Terrestrial Radio

62. Dr. Blackburn does not claim that simulcasts of terrestrial radio broadcasts are good substitutes for subscription streaming services, particularly for subscription on-demand services. In fact, Dr. Blackburn’s analysis indicates that the features of terrestrial radio simulcasts are sufficiently different from the features of subscription services that simulcasts provide “the incentives for listeners to ‘upgrade’ to the additional offerings provided by subscription services.”⁷⁴ This conclusion implies that simulcasts are not good substitutes for subscription services. Moreover, the closest substitute for a digital simulcast of a radio broadcast is the over-the-air broadcast, which will generally contain the same content, indicating simulcasts are most likely to draw listeners from terrestrial radio broadcasts. Dr. Blackburn does not appear to claim that digital simulcasts draw consumers from subscription services, and his assertion regarding the “cannibalization” of subscription revenues by statutory webcasters is inapplicable to simulcasts of terrestrial radio broadcasts.

63. Other SoundExchange witnesses have reached the same conclusion as Dr. Blackburn regarding the differentiation between digital simulcast of terrestrial radio and subscription webcasting services. For example, Dr. Rubinfeld recognizes that [REDACTED]

]]⁷⁵ Dr. Rubinfeld recognizes that [

Thus, Dr. Rubinfeld has [

[[In fact, Dr. Rubinfeld admitted that he [[

⁷³ Blackburn, ¶ 101. See also [REDACTED].

⁷⁴ Blackburn, ¶ 101.

⁷⁵ Rubinfeld Deposition, at 121.

⁷⁶ Rubinfield Deposition, at 121.

- [[REDACTED]]. Simulcasts generally have the same content as terrestrial broadcasts, and according to Mr. Harrison, [[REDACTED]]. Thus,

66. Even with respect to custom webcasters, Dr. Blackburn's claim that they cannibalize revenues earned from subscription on-demand services is unfounded. Consumers have many options for obtaining access to music. Dr. Blackburn's discussion of competition between statutory services and interactive subscription services does not account for these options. As a result, he fails to account for the possibility that if custom webcasting were to be degraded or discontinued, consumers might choose options other than a subscription service (or non-statutory on-demand services more generally) as an alternative.
67. To assess where users of custom webcasting would obtain music if custom webcasting were to be degraded it is useful to examine the services they used before adopting custom webcasting. One alternative to custom webcasting is terrestrial radio. Terrestrial radio is

79 See, e.g.,

a significant source of music for most demographic groups.⁸⁰ Pandora directly targets terrestrial radio listeners to become Pandora users.⁸¹ In fact, Simon Fleming-Wood, Pandora's Chief Marketing Officer, notes "our [Pandora's] closest competitor, and greatest opportunity for converting new listeners, is the broadcast radio industry - including traditional terrestrial (AM/FM) radio, and satellite radio."⁸² Pandora's targeting of radio listeners indicates that terrestrial radio is a closer substitute for Pandora than subscription on-demand services and that users of free-to-the-user custom radio would more likely switch to terrestrial radio than to a subscription on-demand service if custom radio were degraded.⁸³

68. Another way to assess whether Pandora is likely to draw subscribers from subscription on-demand services is to evaluate the substitutes for subscription on-demand services. If there are many closer substitutes for subscription on-demand services than Pandora, it is unlikely that Pandora or custom webcasting draws significant users from subscription services relative to the closer substitutes. Consumers seeking to avoid paying a subscription fee would choose one of the closer substitutes for a subscription service rather than choose Pandora. Record labels have supported this view as well. In the course of seeking approval for their merger, UMG and EMI also asserted that [[

[REDACTED]

] but of course, they are free to the user and do not generate royalties. To the extent these services include on-demand features and other characteristics of on-demand streaming, they

80

[REDACTED] I.

81

See, also, Blackburn, ¶ 37. ("VentureBeat: Will Pandora ever completely unseat terrestrial radio in the car? Will it ever offer a full slate of music, live and local news, weather, traffic, etc.? Westergren: I think we'll get there, but I don't think we're quite there yet. With consumers today the expectation that you have a lot more control [sic]. I think there will always be a place for terrestrial radio. But we think we can get a good share of the time people spend listening in the car. Half of all listening now takes place in the car."). See also Blackburn, ¶ 37. ("Technology has changed the delivery for in-car entertainment once dominated by AM/FM radio," citing SNL Kagan, "The Economics of Internet Music and Radio."). See [[REDACTED]].

82

Written Direct Testimony of Simon Fleming-Wood, ¶ 15.

83

I understand that Pandora is submitting testimony that describes consumers' likely responses to the elimination of the free version of Pandora or the elimination of all free custom webcasting. Written Rebuttal Testimony of Larry Rosin.

84

[[Letter from [REDACTED]].

85

[[Letter from [REDACTED]] (NAB Ex. 30)].

should be considered closer substitutes to subscription on-demand services than custom webcasting.

69. For example, in a white paper supporting the merger, [REDACTED] [REDACTED] Thus, [REDACTED] representations to the FTC indicate that the problem is not the “convergence” of custom webcasting to subscription on-demand services, but the “convergence” of illegitimate sources of music that are limiting subscriptions to on-demand streaming services.

70. [REDACTED] also argued to the FTC that [REDACTED] In fact, [REDACTED] Thus, in the labels’ efforts to compete with piracy, they have allowed the creation of a legitimate free-to-the-user interactive service that is a closer substitute to subscription on-demand services such as Spotify than custom webcasting. A service such as ad-supported Spotify is much more likely to draw consumers from subscription on-demand services than custom webcasting because it provides many of the benefits of subscription Spotify at no cost to the user.

71. Aside from having different sets of features, the major difference between a subscription service and custom webcasting and most other statutory services is the subscription fee itself. To the extent that users of most statutory services have a low willingness to pay for music, they may be effectively unwilling to pay out-of-pocket for any music service. There is substantial evidence that many consumers, in fact, do have a low willingness to pay for music services. For example, WMG has noted that [REDACTED] [REDACTED] When asserting that “free services are not promotional of subscription services”, Dr. Blackburn notes that “most subscription users of music streaming services are ‘music aficionados’ or ‘super fans’ that have a higher willingness to pay for advertisement-free music services.”⁹⁰

72. Of course, Dr. Blackburn’s description of music users who subscribe to music services implies that many consumers who are casual music listeners are not willing to pay

86 [REDACTED] [REDACTED]

87 [REDACTED]

88 [REDACTED]

89 [REDACTED]

90 Blackburn, ¶ 95.

subscription fees. Moreover, the primary competition to subscription services appears to be pirated sources of music or ad-supported on-demand services. Certainly if statutory sources of music exited the market or were substantially degraded these services would be the remaining and virtually limitless source of free music to those unwilling to pay a fee. In fact, UMG and EMI argued [REDACTED]

73. The low or even zero willingness to pay for a music-streaming service of many consumers is not controversial. Dr. McFadden has measured the willingness to pay for certain characteristics of streaming services using an approach that allows him to estimate the willingness to pay of each respondent to his survey.⁹² He finds “that consumers of streaming services divide between those who are willing to pay for these services and the extra features they offer and those who are averse to paying for music streaming services and place relatively low values on these extra features.”⁹³ Clearly, consumers such as these are unlikely to view a subscription service and a free-to-the-user custom webcasting service as substitutes. Dr. McFadden’s results indicate that consumers’ preferences make many of them unlikely to switch between subscription and free-to-the-user services.

IV. Dr. Blackburn’s Discussion of Webcasters Delaying Profits to Invest in Market Share Does Not Provide an Economic Justification for a Rate Increase

74. Dr. Blackburn implies that because Internet firms sometimes “intentionally” delay profitability as they build up user bases, the Judges need not take the current lack of profitability in the industry as a sign that the health of the industry is imperiled – or that royalty rates have been the reason for such shortfall. To the contrary, Dr. Blackburn goes so far as to suggest that Pandora’s royalty rates have provided it a competitive advantage over its rivals and *allowed* it to focus on growth.⁹⁴ He also suggests that Pandora in particular could solve its financial problems “by simply selling more ads.”⁹⁵ To the extent Dr. Blackburn intends these arguments as support for increasing royalty rates – whether because Pandora will be profitable down the road, or because Pandora could cover higher license rates by selling more advertising without damage to its long-term prospects – he is mistaken.
75. The fundamental principle economists use to explain firm behavior is that firms seek to maximize their profits. In practice, firms exist indefinitely so this means that they maximize the discounted stream of their profits over time, or the net present value of profits, which accounts for the fact that a dollar today is worth more than a dollar in the future. Thus, future profits always are (and rationally should be) a concern for the firm.

⁹¹ [REDACTED].

⁹² McFadden, ¶ 52.

⁹³ McFadden, ¶ 10. See also McFadden, ¶ 56. (“The posterior distribution of the values respondents place on a free plan shows a group of consumers who place a high value on no out-of-pocket expenses.”)

⁹⁴ Blackburn, ¶ 78.

⁹⁵ Blackburn, ¶ 88.

When actions today affect profitability in the future, firms may not maximize profits in the current period because doing so is too costly in terms of future profits.⁹⁶ Recognizing that taking “profits” early – whether by seeking to drive up short-term revenue, or by investing inadequately in the business – may be costly in terms of future profits is the key to understanding why rational firms do not focus on maximizing profits in a particular quarter or year. The lower future profits resulting from acting to increase profits today (e.g., by increasing prices or ad loads above optimal levels, or by taking other actions that drive away users) are real costs that offset today’s higher profits. In competitive circumstances, firms that do not act optimally may increase current profitability, but will consequently decrease future profits by a greater amount and, therefore, will be less likely to survive than firms that act optimally.

76. Dr. Blackburn appears to agree with these principles, but he incorrectly applies them to Pandora. Dr. Blackburn notes, rightly, that under certain conditions, it is valuable for firms in an industry to invest in establishing a user base because the users are likely to stick with the firm. Of course, where users are less likely to leave a firm once they establish a business relationship with it, the initial competition for users will be quite fierce – and costly – because once a user is lost to a competitor, that user is most likely lost forever. As Mike Herring’s testimony explains, tremendous up-front investment in systems and sales force (among other items) is also required, in addition to user scale, to attract advertisers and “monetize” the growing user base. As Mr. Herring’s testimony also makes clear, Pandora’s ability to make such investments has been constrained by its royalty costs, which dominate Pandora’s cost structure. Pandora’s financial performance is properly understood as a result of the need to compete for users and invest in the future of the business – that is, its financial performance is the result of its maximizing its profits, not the result of its deferring profits. Firms that do not engage in this competition for users and advertising dollars would be failing to act optimally given the benefits (or necessity) of obtaining users and monetizing their listening hours.⁹⁷
77. That Pandora’s current financial performance reflects a decision to invest in future growth and that Pandora anticipates future profitability do not provide any economic justification for raising license rates or for concluding that doing so can be done without cost or consequence. To the contrary, the discussion above makes clear that Pandora’s future growth and profitability – in addition to being uncertain – is dependent on the ability to continue making necessary investments in the future. A dramatic increase in current costs – including a near doubling of royalty rates – necessarily will interfere with Pandora’s ability to continue to invest in its business, negatively affecting future growth and profitability. The same is true of the suggestion that Pandora could simply “sell more ads” if it wanted – and thus cover any royalty increase. While I will defer to Mr. Herring as to whether it would even be possible for Pandora to do so, Dr. Blackburn appears to overlook (or ignore) the fact that increased ad loads, even if they might boost revenue in the short term, might very well drive away listeners, compromise future earnings, and

⁹⁶ See, e.g., Thomas E. Copeland and J. Fred Weston, *Financial Theory and Corporate Policy*, 3rd Ed. (Reading: Addison-Wesley Publishing Company, 1988), at 22-23.

⁹⁷ See Written Rebuttal Testimony of Michael Herring.

thus decrease Pandora's financial performance. Rate increases should not be premised on the conclusion that Pandora could afford them (at least in the short term) by pursuing what Dr. Blackburn agrees (assuming Pandora is currently operating rationally) would be a suboptimal strategy.⁹⁸

78. Dr. Blackburn's study of the profitability of Internet firms does not alter these conclusions. Instead, it shows that these firms had more users and higher revenues and that some were more profitable two years after their initial public offerings than they were two years before.⁹⁹ It is not surprising that firms that survive two years beyond their public offerings have more customers and revenue and sometimes higher profits than they had before going public. Nothing about this pattern of growth in users, revenues, and profitability indicates that the firms included in his study did not act rationally or that they did not maximize their profitability – properly defined – at all times. Moreover, many of the firms' in Dr. Blackburn's study failed to achieve profitability or even had greater losses (operating income) following their IPOs than before.¹⁰⁰ Thus, Dr. Blackburn's study shows that "profitability" is uncertain even after years of attempting to build a base of users.
79. Dr. Blackburn's analysis highlights the fact that even those Internet firms that succeed to the point of having an IPO can remain unprofitable or grow even more unprofitable. Thus, the "expected" profits that Internet firms invest to achieve profitability must be considered uncertain until they are actually realized. Most critically, Dr. Blackburn's analysis of profitability provides no basis to assume that Internet firms generally, or Pandora in particular, would be able to raise prices or increase ad inventory to cover additional costs in the short term – and certainly not to do so without harm to their businesses and prospects for long-term success.

V. Dr. McFadden's Analysis Demonstrates that Many Consumers Have a Low Willingness to Pay for Streaming and Does Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"

A. Dr. McFadden's Results Show That a Significant Share of Consumers Have Low Willingness to Pay for Streaming

80. Dr. McFadden estimates the average willingness to pay for a number of features of streaming services based on results from a survey he designed. At my direction, Dr.

⁹⁸ UMG and EMI recognized that if a music service is behaving optimally, there is no way for it to better monetize its content. "If it is possible to improve the way in which music is monetized without degrading the quality and attractiveness of a platform, a digital retailer would have done so already." COMP/M.6458 – Universal Music Group / EMI Music, Supplementary Submission, at 18-19 (SNDEX0268469-70).

⁹⁹ Blackburn at ¶¶ 68-69.

¹⁰⁰ Blackburn, Table 8.

McFadden's model was rerun using the results of his survey and the computer code provided. The results closely match Dr. McFadden's.¹⁰¹

81. Willingness to pay in the context of Dr. McFadden's model means something quite specific. In Dr. McFadden's model, the features are measured relative to a streaming service with a baseline level of features.¹⁰² His survey asked respondents to make choices over different services with different prices and different combinations of features to elicit the amounts they are willing to pay for different features. Figure 6 shows the features and levels of those of features that Dr. McFadden included in his analysis.

Figure 6
Features Included in Dr. McFadden's Analysis

Attribute	Feature Level
Playlist generation method	<ul style="list-style-type: none"> • Curated by music tastemakers* • Generated by a computer algorithm customized by your preferences • Curated by music tastemakers and generated by a computer algorithm customized by your preferences
Features available for streaming to a computer	<ul style="list-style-type: none"> • Playlists generated by the service* • Playlists generated by the service and Album, artist and song selection on demand
Ability to listen offline	<ul style="list-style-type: none"> • Not available* • Available
Features available for streaming to mobile devices	<ul style="list-style-type: none"> • Not available* • Playlists generated by the service • Playlists generated by the service and Albums and artists chosen by you, but tracks are played in a random order • Playlists generated by the service and Album, artist and song selection on demand
Ability to skip songs	<ul style="list-style-type: none"> • Up to 6 skips per hour* • Unlimited ability to skip tracks
Music library size	<ul style="list-style-type: none"> • 1 million songs* • 10 million songs • 20 million songs • More than 20 million songs
Advertising	<ul style="list-style-type: none"> • 1.5 to 3 minutes of ads per hour* • No ads

¹⁰¹ A comparison of the recreated results and Dr. McFadden's results are contained in Appendix C. The results are a close match to Dr. McFadden's. Dr. McFadden's code implementing his estimation did not set a fixed "seed" for the estimation, which entails generating random numbers. Without a fixed seed, the estimation will yield slightly different results each time the code is run.

¹⁰² McFadden, ¶ 57.

Source: McFadden, Table 1 and ¶ 57.

Note: A * indicates the features included in McFadden's baseline specification.

82. Dr. McFadden presents only the estimated *average* willingness to pay for each feature addressed in his survey. However, it is possible to estimate each survey participant's willingness to pay for the features addressed in the survey.¹⁰³ Based on the information for individual respondents, Dr. McFadden notes that there is a group of users who are averse to paying for music streaming services.¹⁰⁴ Of course, all consumers are averse to paying for things, always preferring to pay less rather than more for a good or service. In fact, Dr. McFadden's results show more than that some consumers are averse to paying for streaming services. The results of his analysis show that a substantial number of consumers place a *negative value* on many of the features streaming services offer and place a negative value on the bundle of features included in high-end subscription streaming services. Thus, Dr. McFadden's results are consistent with [REDACTED] [REDACTED] indicate many consumers have a low willingness to pay for subscription streaming services. However, Dr. McFadden's results also indicate that a significant group of consumers dislikes and will avoid many features that are normally thought to be desirable. Thus, adding features to a service can actually drive consumers away from it according to Dr. McFadden's results.
83. Figure 7 illustrates this for a particular feature. The figure shows the distribution of the willingness to pay for a streaming service with more than 20 million songs relative to an otherwise identical service with one million songs, weighted for the population of future users.¹⁰⁵ The height of each vertical line shows the share¹⁰⁶ of respondents with a willingness to pay for the feature within a given range of valuations of the feature (shown on the horizontal axis).

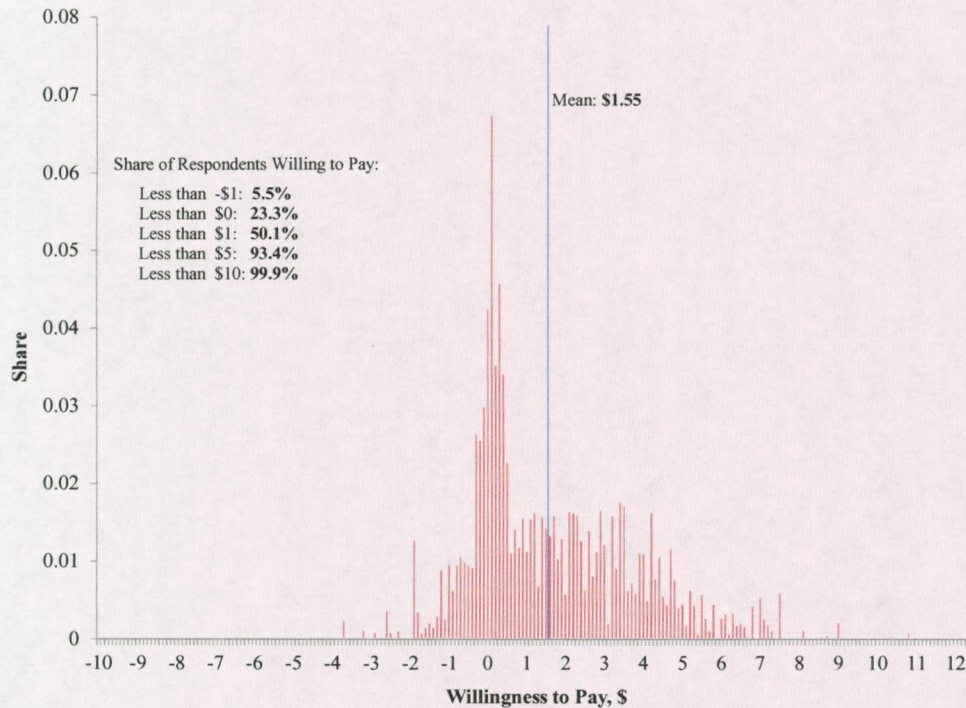
¹⁰³ McFadden, ¶ 52.

¹⁰⁴ McFadden, ¶ 10.

¹⁰⁵ Dr. McFadden weights his results for different populations. His preferred population is what he calls "future users." McFadden at ¶ 54. The results presented here are weighted for Dr. McFadden's preferred group.

¹⁰⁶ For example, "0.05" indicates 5% of respondents.

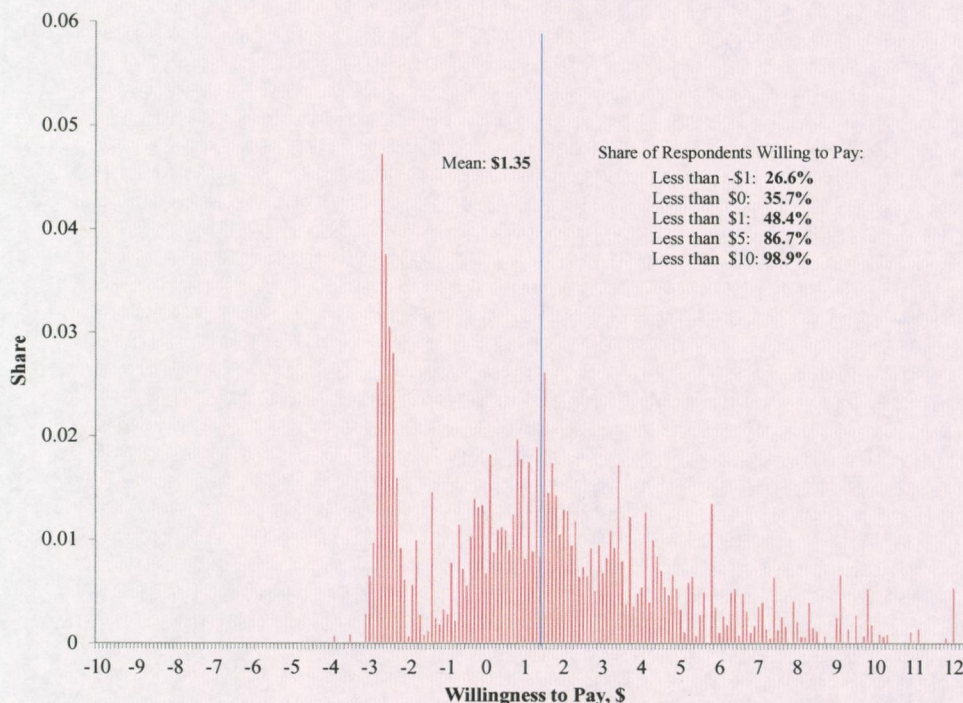
Figure 7
Distribution of Future Users' Willingness to Pay for Catalog of more than 20 Million Songs



84. As illustrated the average willingness to pay for a music library of more than 20 million songs is \$1.55 per month. However, this average does not necessarily describe either the range of values that consumers place on a larger music library or reflect the valuation that is most commonly held by consumers. The figure shows that a significant share of future users - approximately 23% – has a negative willingness to pay for the larger song library. For individuals with these tastes, Dr. McFadden's results indicate that a streaming service with one million songs is preferable to a service with more than 20 million songs, all else equal. Thus, a substantial share of users do not just have a low willingness to pay for more songs, the additional musical content has a negative value for them. Thus, a significant share of consumers will behave in a way that is inconsistent with the general intuition that more songs are always better. Moreover, the average willingness to pay provides no indication of consumers' divergent preferences regarding the size of a song library.
85. In fact, there are some consumers with a negative willingness to pay for most of the features in Dr. McFadden's model, and the share of these consumers is often significant. Figure 8 shows the distribution of willingness to pay for a service with no advertisements. On average, future users are willing to pay about \$1.35 for a service with no ads relative to one with ads. However, nearly 36% of future users prefer a service with ads relative to a service without ads, all else equal. Moreover, the distribution is bimodal, meaning it has two peaks. There is a group of consumers that places a value of between negative \$2 to negative \$3 (indicated on the horizontal axis). The negative willingness to pay for a

service with no advertisements means these consumers prefer a service with advertisements over one without. There is a second peak in the distribution of consumers' willingness to pay for a service with no advertisements between \$1 and \$2. These consumers have the more intuitive preference for a service without ads and will pay something additional for a service with no ads. In this case, the average willingness to pay for a service with no ads masks the fact that there is a bimodal distribution (*i.e.*, a distribution with two peaks) of preferences over the willingness to pay for a service with no advertisements and that the peaks occur so that consumers at the peaks have divergent preferences (*i.e.*, would respond in opposite ways) regarding a service with or without advertisements.

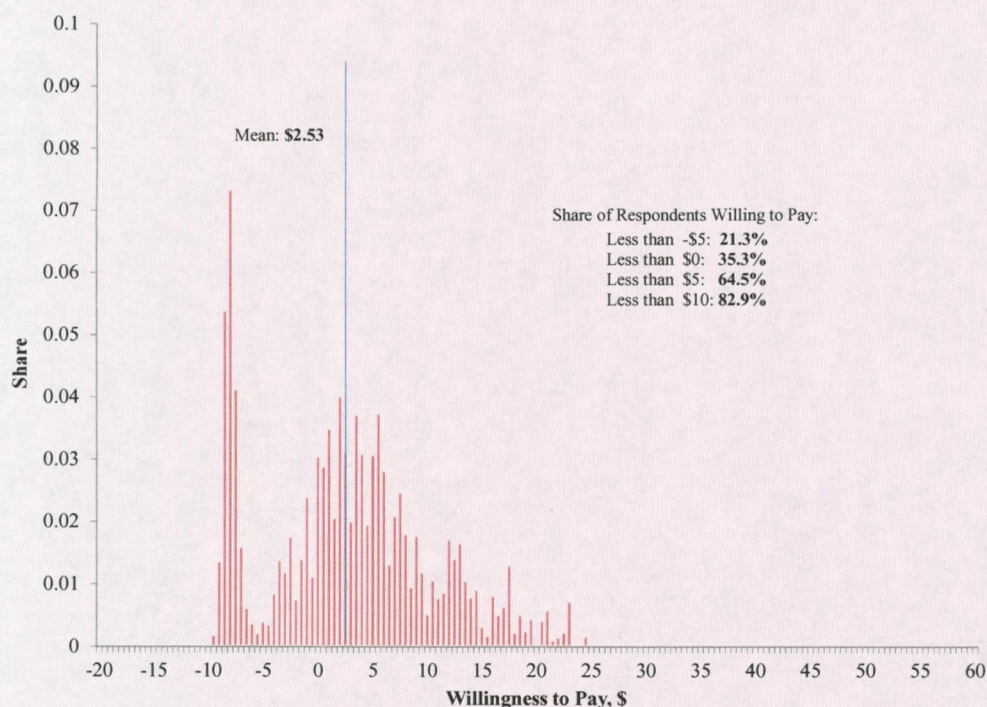
Figure 8
Willingness to Pay for No Advertisements



86. There is no reason that consumers cannot dislike certain features of a webcasting service. The fact that consumers are split on whether a feature adds or detracts from a service means that it is difficult to design a service that will be appealing to all consumers. For example, adding a larger library might seem to be a good way to attract users, but according to Dr. McFadden's results, a larger library is expected to lower the value of a service for 23% of users. Similarly, removing advertisements may seem to be a good way to attract users to a service, but doing so is expected to lower the value of the service for 36% of users. With a wide range of values for individual features, ranging from liking a feature a lot to disliking it a lot, the "convergence" of services with different features in the minds of a large number of consumers becomes less likely.

87. As noted, Dr. McFadden provides only estimates of the average willingness to pay for features of streaming services. Where estimates of the individual willingness to pay are both positive and negative and when the distributions of willingness to pay are bimodal (sometimes with peaks on either side of zero), the average willingness to pay does a particularly poor job of describing the range and even the direction of preferences. In the examples above, the average valuations are positive, indicating positive average valuations for features that would generally be considered to be desirable. However, the full distributions of consumer preferences show that while some consumers like a feature, another group dislikes the feature. It is always the case that the average does not fully describe a distribution. In this case, however, the averages often do not even get the direction of many consumers' preferences right and therefore do not indicate that groups of consumers will respond not just differently to changes in a service's features but in opposing directions.
88. This problem is not limited to individual features of streaming services. It extends to the willingness to pay for the bundles of features included in services. Consider consumers' willingness to pay for a service such as Spotify Premium relative to an ad-supported version of the same service. The difference between services of these types primarily entails restrictions on the level of on-demand mobile service and whether the service allows off-line listening. Since the ad-supported service is free to the user, the relative willingness to pay for the subscription service over the ad-supported service is a measure of consumers' willingness to pay out of pocket for the additional features offered by the subscription service. (Consumers will not pay for the features that they can obtain for free in the marketplace, but consumers will pay for the "extras" that they cannot get for free.)
89. Figure 9 illustrates the willingness to pay for a premium subscription service relative to a free-to-the-user ad-supported service. The figure shows that the distribution of the willingness to pay for the features of a premium on-demand service relative to an ad-supported service is bimodal. One peak occurs where consumers have a negative willingness to pay for incremental features and another peak occurs where consumers have a positive willingness to pay for incremental features, but lower than the typical price of a premium on-demand service. Once again, the average willingness to pay is positive, but does not capture the fact that some consumers prefer services without the incremental features of a premium on-demand service relative to an ad-supported service.

Figure 9
Willingness to Pay for a Premium On-Demand Subscription Service over a Free Ad-Supported Service



90. The figure also illustrates that potentially only a relatively small share of consumers may be willing to pay for a subscription on-demand service relative to an ad-supported on-demand service. In this example, about 17% of consumers value the incremental features of the premium service by more than the typical \$10 subscription price.
91. Of course, even those who value the service by more than \$10 may not buy it because they may prefer an option not included in this example, such as buying CDs, downloading digital tracks, or using a pirate service. The alternatives to using some type of streaming service were not included in Dr. McFadden's survey, so it is not possible to know from the survey how they are valued by consumers or how they would affect consumers' choices. As UMG and EMI have asserted [REDACTED]
- [REDACTED] 107 In this regard, Figure 9 understates the "competition" faced by the premium streaming service. In the music marketplace, consumers would compare the streaming service to many other alternatives rather than just the one alternative in the above example. The availability of other alternatives would lower the likelihood that the premium streaming service is a consumer's first choice.

See, *e.g.*, [1].

92. Moreover, this example illustrates the limitations of estimates of the average willingness to pay for describing consumer behavior. The figure shows that the average willingness to pay for the subscription service over the ad-supported service is \$2.53, well below a typical monthly subscription price for a premium on-demand service of \$10. If all consumers had the average willingness to pay for the premium subscription service, no one would buy it. However, there are some consumers with more extreme preferences that would be willing to pay the monthly subscription fee *if the only other choice in the marketplace were the ad-supported service*. Thus, the average willingness to pay for features as measured by Dr. McFadden's survey does not tell us about market outcomes. They are unrelated to market prices and do not describe the choices of any individual consumer.
93. Dr. McFadden's analysis identifies a significant share of consumers with a negative willingness to pay for many features of a streaming service. This outcome is most likely related to the fact that 24% of his survey respondents uniformly chose the first option in each choice task, the free-to-the-user option. In addition, of all responses provided, about 59% indicated a preference for the free service. Thus, the survey respondents indicated through their responses that they do, in fact, have a strong aversion to paying for an upgraded streaming service with more features. Another alternative, however, is that these and possibly other respondents did not have a good understanding of the survey instrument and disproportionately chose the first choice offered. I understand that John Hauser is addressing this issue.¹⁰⁸

B. Dr. McFadden's Results Do Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"

94. Dr. Rubinfeld uses the license fees the record labels charge to non-statutory on-demand streaming services as benchmarks for the statutory rates he recommends. Dr. Rubinfeld allows that some adjustment to these rates is appropriate for statutory webcasters. To define an adjustment, he assumes that "the ratio of the average retail subscription price to the per subscriber royalty paid by the licensee to the record label is approximately the same in both interactive and non-interactive markets."¹⁰⁹ In order to adjust the non-statutory rates to a level consistent with this assumption, Dr. Rubinfeld calculates an "interactivity adjustment" equal to the ratio of the average subscription prices of on-demand and non-interactive services.¹¹⁰ Dr. Rubinfeld finds that the ratio of the average retail subscription price of on-demand services and the average subscription price of statutory services is about 2.¹¹¹ The asserted logic of the "interactivity adjustment" is that subscription rates for non-statutory services are about double subscription rates for statutory services. Therefore, according to Dr. Rubinfeld, license rates for non-statutory services should be about double license rates for statutory services, all else equal. Dr. Rubinfeld uses the "interactivity adjustment" to downward adjust his benchmark

¹⁰⁸ Rebuttal Testimony of John Hauser.

¹⁰⁹ Rubinfeld, ¶ 169.

¹¹⁰ Rubinfeld, ¶ 171

¹¹¹ Rubinfeld, ¶ 171.

interactive license fees to a level he asserts is appropriate for statutory non-interactive license fees.

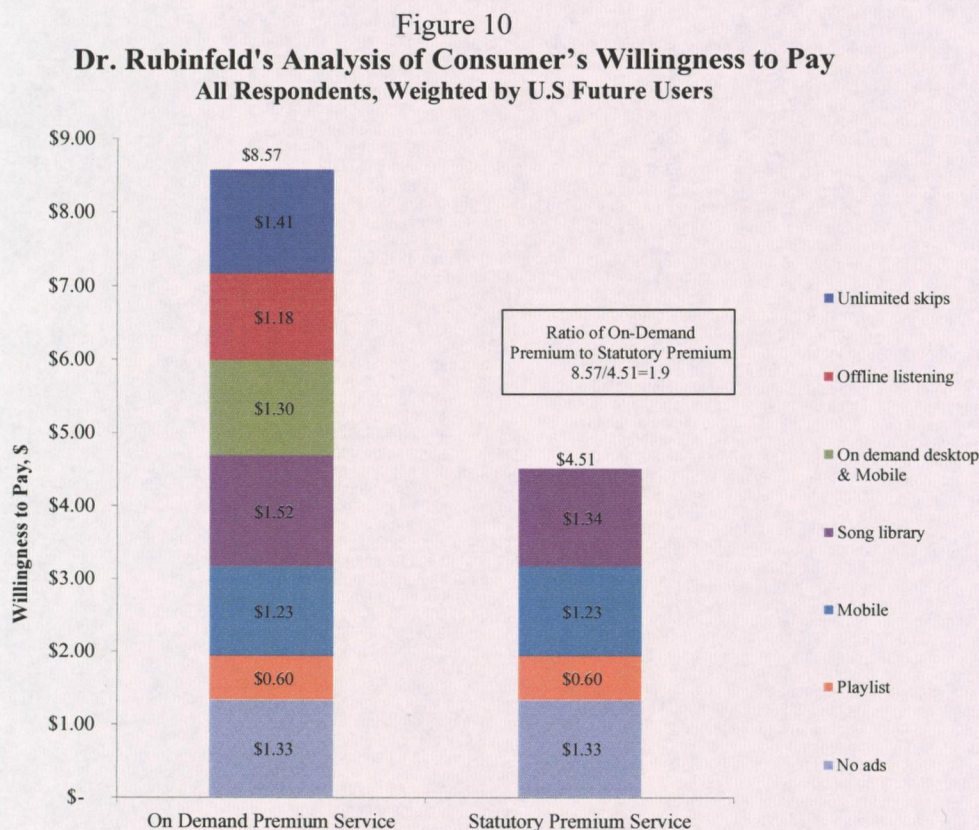
95. As support for his calculation of an “interactivity adjustment” using subscription prices, Dr. Rubinfeld asserts that Dr. McFadden’s estimates of consumers’ willingness to pay for the features of interactive and non-interactive services indicates that the “interactivity adjustment” calculated from subscription prices is “conservative.”¹¹² By this, Dr. Rubinfeld means that the ratio of the average willingness to pay for the features of an interactive service (computed from Dr. McFadden’s survey) is slightly less than double the willingness to pay for the features of a statutory service. The implication is that the downward adjustment to Dr. Rubinfeld’s benchmark license rates would be smaller if he used the alternative “interactivity adjustment” based on his calculations using Dr. McFadden’s results rather than his “interactivity adjustment” based on average subscription prices.
96. Despite the fact that Dr. Rubinfeld has used Dr. McFadden’s estimates of willingness to pay in order to calculate a result that is close to his “interactivity adjustment,” Dr. Rubinfeld’s claim that Dr. McFadden’s estimates of willingness to pay support his “interactivity adjustment” is incorrect for two reasons. First, Dr. Rubinfeld’s “interactivity adjustment” is designed to keep the ratio of subscription prices and license fees the same for statutory and non-statutory services.¹¹³ As a matter of basic arithmetic, this adjustment involves subscription prices and license fees. It is not related to Dr. McFadden’s estimates of the average willingness to pay for the features of different types of services. In fact, Dr. McFadden’s estimates of willingness to pay need not have any relationship to market prices, which means that they cannot be used in a calculation designed to preserve the relationship between retail subscription prices and license fees as Dr. Rubinfeld assumes should be done.
97. Second, Dr. Rubinfeld’s two calculations are based on different sets of features. He uses all of the features of interactive and non-interactive services when calculating an interactivity adjustment based on willingness to pay. Of course, consumers will not pay for features they can get for free. Therefore, the subscription prices measure the value of only those features not available for free in the marketplace.
98. Figure 10 illustrates Dr. Rubinfeld’s calculation of the interactivity adjustment from the average willingness to pay for different streaming features estimated by Dr. McFadden. Dr. Rubinfeld assumes that a subscription statutory service, such as Pandora One, has no advertisements, playlists from algorithm and tastemakers, a mobile service, and a song library of 10 million songs. The total average willingness to pay for this bundle of features based on Dr. McFadden’s estimates is \$4.51.¹¹⁴ Dr. Rubinfeld assumes that a premium on-demand service includes no advertisements, playlists from algorithm and tastemakers, and a mobile service, just as the statutory service does. In addition, the on-

¹¹² Rubinfeld, ¶ 171.

¹¹³ Rubinfeld, ¶ 169.

¹¹⁴ Rubinfeld, Exhibit 14.

demand service includes a library of more than 20 million songs (rather than 10 million), on-demand on the desktop and on mobile, offline listening, and unlimited skips. The total average willingness to pay for this on-demand service based on Dr. McFadden's estimates is \$8.57.¹¹⁵



Source: Rubinfeld, Exhibit 14.

99. The ratio of the average willingness to pay for the bundle of features Dr. Rubinfeld defines as his on-demand service relative to the bundle of features Dr. Rubinfeld defines as his statutory service is \$8.57 divided by \$4.51, which is equal to 1.9. As noted, Dr. Rubinfeld claims this calculation indicates that his “interactivity adjustment” of 2 is conservative because an “interactivity adjustment” of 1.9 would lead to a smaller downward adjustment of the non-statutory license fees he uses as benchmarks than the adjustment he actually uses.¹¹⁶
100. In fact, Dr. Rubinfeld’s two calculations using prices and willingness to pay are unrelated. This is easily seen in an example illustrating Dr. Rubinfeld’s adjustment of his benchmark license rates. Dr. Rubinfeld assumes that the “the ratio of the average retail

¹¹⁵ Rubinfeld, Exhibit 14.

¹¹⁶ Rubinfeld ¶ 171.

subscription price to the per-subscriber royalty paid by the licensee to the record label is approximately the same in both non-interactive and interactive markets.”¹¹⁷ This means, for example, that if interactive license fees are 40% of interactive retail subscription fees, then statutory (non-interactive) license fees should be 40% of statutory (non-interactive) retail subscription fees. The arithmetic of his “interactivity adjustment” is straightforward. If the ratio of interactive subscription fees to statutory subscription fees is about 2, dividing interactive license fees by 2 yields a statutory license fee that will be in the same proportion to statutory subscription fees as interactive license fees are to interactive subscription fees.¹¹⁸

101. I do not endorse Dr. Rubinfeld’s calculation, but it is straightforward to see that if the ratio of retail subscription prices to license fees is to be the same in the interactive and statutory marketplaces, a ratio of *prices* is what is needed to do the necessary arithmetic.
102. It is also straightforward to see that the estimates of the average willingness to pay have nothing to do with the retail subscription prices of music services. This is most easily seen in Figure 10 above, which recreates Dr. Rubinfeld’s Exhibit 14. The average willingness to pay for an interactive service (derived from Dr. McFadden’s survey) is \$8.57 according to Dr. Rubinfeld. This is lower than the average price of an interactive service, which he calculates to be \$9.86 per month.¹¹⁹ An individual with the average willingness to pay for an interactive subscription service that Dr. Rubinfeld calculates would not buy the service at the average price. In fact, no one would buy the vast majority of interactive subscription services, most of which have a subscription price of \$9.99 per month or higher. Similarly, Dr. Rubinfeld calculates that the average subscription price for a statutory service is between \$4.84 and \$5.27 per month. In either case, this amount is above the average willingness to pay for a statutory service of \$4.51 per month. This example illustrates that there is simply no economic relationship between the average willingness to pay estimated by Dr. McFadden (and added up by Dr. Rubinfeld) and the price of the services offered in the marketplace.
103. In short, Dr. Rubinfeld intends for the ratios of subscription prices to license fees to be the same in the interactive and non-interactive markets.¹²⁰ However, there is no relationship between the average willingness to pay for the features included in a service and the market price of that service. Therefore, no calculation using estimates of average willingness to pay will preserve the relationship Dr. Rubinfeld uses to develop his proposed statutory rates.

¹¹⁷ Rubinfeld, ¶ 169

¹¹⁸ For example, if the interactive subscription fee is \$10, the interactive license fee per user is \$4, and the non-interactive statutory subscription fee is \$5, the ratio of the interactive license fee to the interactive subscription price is 40% ($\$4/\$10=40\%$) and Dr. Rubinfeld’s “interactivity adjustment” is 2 ($\$10/\$5=2$). If the \$4 interactive license fee is divided by the interactivity adjustment, the implied license fee for non-interactive statutory services is \$2 ($\$4/2=\2). The resulting non-interactive license fee is 40% of the non-interactive subscription fee of \$5 ($\$2/\$5=40\%$).

¹¹⁹ Rubinfeld, Exhibit 5.

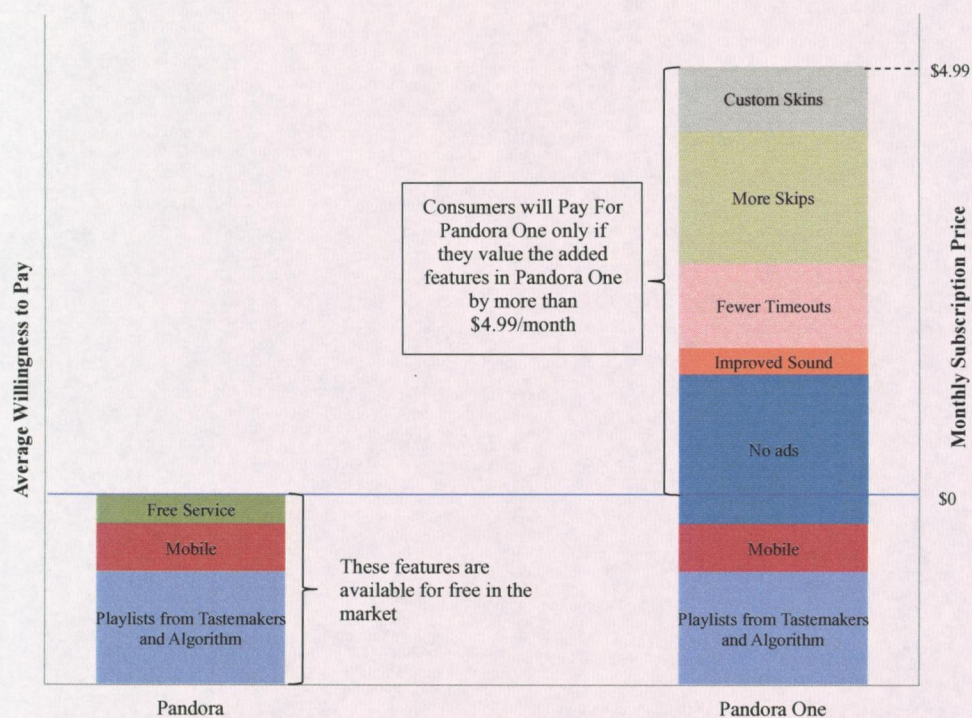
¹²⁰ Rubinfeld, ¶ 169.

104. Dr. Rubinfeld's use of the average willingness to pay to support his "interactivity adjustment" suffers from another flaw. Many of the features used to build up the estimate of the average willingness to pay for his hypothetical interactive and statutory services are available for free in the marketplace. Of course, consumers will not pay for all of the features of a service when they can get many for free. When deciding to buy a subscription service rather than a free-to-the-user service, the consumer makes her choice based on whether the features included in the subscription service and not included in the free service (*i.e.*, the extras obtained from the subscription service) are worth the subscription fee.
105. The implication of consumer behavior is that the estimates of the average willingness to pay that Dr. Rubinfeld calculates in Figure 10 include the value of features that consumers will not be willing to pay for in the marketplace. As a result, the features that Dr. Rubinfeld uses to estimate the ratio of the average willingness to pay for an interactive subscription service and a statutory non-interactive service are not the same features that consumers evaluate when deciding to buy a subscription service or to use a free-to-the-user service. In addition, some of the features that are relevant to the choice of whether to buy a subscription service are not addressed in Dr. McFadden's study.
106. The following example illustrates this point.
107. Figure 11 illustrates a consumer's decision regarding whether to sign up for the premium statutory service Pandora One under the assumption that the next best choice is Pandora's ad-supported service. The left-hand bar in Figure 11 shows the features offered by Pandora's ad-supported service that are included in Dr. McFadden's survey analysis. The market price to the user of this service is \$0 - it is free to the user. The right-hand bar shows the features of Pandora One. It includes the features of "Pandora," with the exception that it is not a "free service." In addition, Pandora One offers no ads, improved sound quality, fewer timeouts, more (but not unlimited) skips, and custom skins.¹²¹ Of course a consumer will make an incremental expenditure on a music service only if she values the additional features more than the additional expenditure necessary to obtain them. Thus, the consumer is paying a subscription fee of \$4.99 per month to obtain the features included in Pandora One less the features included in ad-supported Pandora. The subscription fee does not provide any indication of her willingness to pay for the features that she could obtain for free in the marketplace.

121

See <http://www.pandora.com/one> (accessed February 22, 2015).

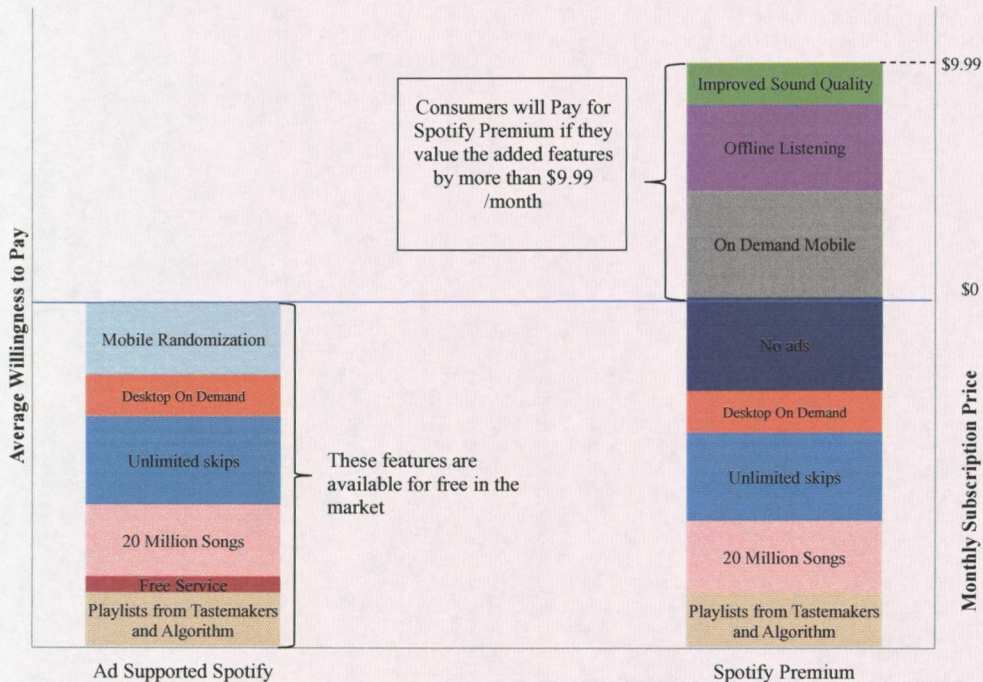
Figure 11
Consumers Pay for Features that Are Not Available for Free in the Market



108. A consumer making the decision to subscribe to the premium Spotify service must make the same type of choice. Figure 12 illustrates a hypothetical consumer choice for deciding between ad-supported Spotify and premium Spotify. A free option, such as ad-supported Spotify may be the consumer's second-best alternative to choosing to subscribe to premium Spotify for \$9.99 per month. Once again the consumer will pay a subscription fee only if he values the features not available for free in the marketplace by more than the subscription fee. In this case, the consumer will subscribe to Spotify Premium if he values improved sound, offline listening, on-demand mobile rather than randomized mobile, no ads, and the loss of having a free service by more than \$9.99 per month.¹²²

¹²² <https://www.spotify.com/us/premium/> (accessed February 22, 2015).

Figure 12
Consumers Pay for Features that Are Not Available for Free in the Market



109. Figure 13 compares the features that Dr. Rubinfeld uses to calculate the “interactivity adjustment” based on subscription prices and willingness to pay. The figure illustrates that the two “interactivity adjustments” are based on the values of different sets of features in this example. When choosing to buy a subscription service, consumers consider the value of the “extra features” that are not available in free services. These features are shown in the top row of Figure 13 for the choices involved in the above example. In Dr. Rubinfeld’s calculation based on estimates of average willingness to pay, however, he includes all features of the services, whether they are available for free in the marketplace or not. As the figure shows, the sets of features relevant to the consumers’ choices to subscribe are not the same as the features Dr. Rubinfeld uses when estimating the relative willingness to pay for an interactive and non-interactive service. Of course, if consumers consider a different set of features when deciding which music service to buy than Dr. Rubinfeld used to calculate an “interactivity adjustment” based on estimates of average willingness to pay, there is no reason that the two calculations will agree except by chance.¹²³ The example also illustrates that some of the features that are relevant to consumers’ choices, such as improved sound quality, are not included in Dr. McFadden’s analysis.

¹²³

In general, consumers choose the product that gives the greatest surplus from the products available in the marketplace. This does not affect the conclusion that no matter how a consumer ranks her choices, the features relevant to the decision to subscribe or not subscribe to a particular service will not be the same as those Dr. Rubinfeld uses to estimate an “interactivity adjustment” based on Dr. McFadden’s analysis.

Figure 13
Comparison of Features Valued by Dr. Rubinfeld's Calculations of the "Interactivity Adjustment"

	<u>Statutory Service</u>	<u>On-Demand Service</u>
	<u>Pandora One v. Pandora's Free Service</u>	<u>Spotify Premium v. Ad-Supported Spotify</u>
<i>Rubinfeld's Calculations Based on Subscription Prices</i>	No Advertising less Free Service Fewer Timeouts More Skips Custom Skins Improved Sound Quality (192 kbps)	No Advertising less Free Service On-Demand Mobile Service less Mobile Randomization Offline Listening Improved Sound Quality (320 kbps)
	<u>Statutory Subscription Service v. McFadden's Baseline Service</u>	<u>Non-Statutory Subscription Service v. McFadden's Baseline Service</u>
<i>Rubinfeld's Calculations Based on Dr. McFadden's Estimates of Average WTP</i>	Catalog from 1M to 10M Songs No Advertising Playlists from Algorithm and Tastemakers Mobile Service	Catalog from 1M to 20M+ Songs No Advertising Playlists from Algorithm and Tastemakers Mobile Service On-Demand Mobile and Desktop Offline Listening Unlimited Skips

110. Dr. Rubinfeld's attempt to use Dr. McFadden's estimates of the average willingness to pay for features of streaming services is incorrect. Dr. Rubinfeld's primary assumption regarding the adjustment of interactive license fees to estimate statutory license fees depends on the ratio of interactive and statutory subscription fees and interactive and statutory license fees. Estimates of the average willingness to pay do not have any economic relationship to the market prices his adjustment demands. There is no reason that replacing prices with estimates of the average willingness to pay in his "interactivity adjustment" will preserve the ratios of subscription prices to license fees as he assumes should be done. In addition, Dr. Rubinfeld's use of Dr. McFadden's estimates of willingness to pay for features to support his calculation of an "interactivity adjustment" fails to account for the fact that consumers will not pay for features that they can get in the marketplace for free. Thus, Dr. Rubinfeld's calculation using estimates of average willingness to pay from Dr. McFadden's survey are economically meaningless.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Library of Congress
Washington, D.C.

In re

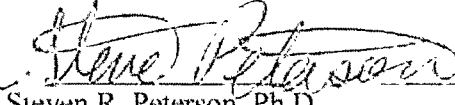
DETERMINATION OF ROYALTY
RATES AND TERMS FOR
EPHEMERAL RECORDING AND
DIGITAL PERFORMANCE OF SOUND
RECORDINGS (*WEB IV*)

DOCKET NO. 14-CRB-0001-WR
(2016-2020)

DECLARATION OF STEVEN R. PETERSON

I, Steven R. Peterson, declare under penalty of perjury that the matters set forth in my
Corrected Written Rebuttal Testimony in the above-captioned proceeding are true and correct.

Executed this 24th day of March 2015.


Steven R. Peterson, Ph.D.

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PROFESSIONAL EXPERIENCE

Compass Lexecon
Boston, MA
Executive Vice President, April 2013 – present
Senior Vice President, January 2006 – March 2013
Managing Director, August 1999 – December 2005

The Economics Resource Group, Inc.
Senior Economist, 1992 – July 1999
Economist, 1990 – 1992

Northeastern University, Boston, MA
Adjunct Faculty, 2011-2013

Harvard University, Cambridge, MA
Teaching Fellow, 1989 – 1990

EDUCATION

Harvard University, Cambridge, MA
Ph.D. in Economics, 1992
Dissertation: "Strategic Aspects of Litigation and Settlement"

University of California, Davis
A.B., Economics, 1987, Highest Honors

Appendix A

TESTIMONY AND CONSULTING EXPERIENCE

National Association of Broadcasters

In re Antitrust Consent Decree Review: American Society of Composers, Authors and Publishers/Broadcast Music, Inc. Comments on Behalf of the National Association of Broadcasters (August 6, 2014).

Leidos, Inc.

United States of America v. Leidos, Inc., in the United States District Court for the District of Columbia. Expert Report (March 28, 2014).

Radio Music License Committee

Radio Music License Committee v. SESAC, Inc., SESAC, LLC, and SESAC Holdings, Inc. in the United States District Court for the Eastern District of Pennsylvania. Declaration (November 14, 2013). Deposition (December 4, 2013). Trial Testimony (December 10, 2013).

BJ's Wholesale Club, Inc.

Irene Cappalli v. BJ's Wholesale Club Inc. in the United States District Court, District of Rhode Island. Expert Report (March 15, 2012). Deposition (April 27, 2012). Declaration (February 12, 2013).

National Marine Fisheries Service

Consultant to National Marine Fisheries Service on market power and excessive-share limits in the Surf Clam and Ocean Quahog fisheries (2010 – 2011).

Energy Intensive Manufacturers Working Group

Coalition for Responsible Regulation, Inc. et al. v. United States Environmental Protection Agency, in the United States Court of Appeals for the District of Columbia Circuit. Declaration (September 14, 2010).

Amex Construction Company, Inc.

ExxonMobil Oil Corporation v. Amex Construction Company, Inc., in the United States District Court, Northern District of Illinois, Eastern Division. Expert Report (February 15, 2010). Deposition (March 2, 2010).

Delta Air Lines, Inc.

Consultant to Delta Air Lines on LaGuardia/Reagan National Airport slot swap with U.S. Airways (2009 – 2010).

Imperial Credit Industries, Inc.

In re: Imperial Credit Industries, Inc., in the United States Bankruptcy Court, Central District of California, Santa Ana Division. Rebuttal Report (April 27, 2007). Trial Testimony (May 22, 2008).

Delta Air Lines, Inc.

Consultant to Delta Air Lines on Delta-Northwest merger (2007 – October 2008).

Greater Lakeside Corporation

The Higbee Company v. Greater Lakeside Corporation, Causeway LLC of Delaware, Broadway Management Corporation, and Jeffrey Feil, in the United States District Court for the Eastern District of Louisiana. Expert Report (September 18, 2007). Supplemental Expert Report (September 25, 2007). Deposition (October 19, 2007).

TransCanada Corporation

Consultant to TransCanada Corporation on acquisition of ANR Group (2007).

Exxon Mobil Corporation

JAAM, Inc., d/b/a Tigerland Exxon v. Exxon Mobil Corporation and Mon Valley Petroleum, Inc., in the United States District Court for the Western District of Pennsylvania. Expert Report (January 12, 2007).

Finova Capital

In Re: Finova Capital Corporation and Finova Mezzanine Capital, Inc., in the United States Bankruptcy Court for the District of Delaware. Expert Report (May 19, 2006). Deposition (August 2, 2006).

Volvo Cars of North America, Inc.

Bay Ridge Volvo American, Inc. et al. v. Volvo Cars of North America, Inc., in the United States District Court Southern District of New York. Expert Report (June 1, 2005). Deposition (August 17, 2005). Supplemental Expert Report (November 11, 2005).

Israel Electric Corporation, Ltd.

Israel Electric Corporation Ltd. vs. the Public Utilities Authority, the Minister of National Infrastructures, the Minister of Finance, the Israel Securities Authority and the Government Corporations Authority (Request for Injunction): In the Israeli Supreme Court, No. /04, August 2004. Statement (August 30, 2004), with Joseph P. Kalt and Paul B. Vasington.

Flying J, Inc.

Flying J, Inc. v. Comdata Network, Inc., in the United States District Court of Utah (Northern Division). Declaration (June 22, 2004). Damages Report (June 22, 2004). Deposition (October 6, 2004). Hearing Testimony (November 19, 2004).

Musicmatch, Inc.

Gracenote, Inc. v. Musicmatch Inc., in the United States District Court Northern District of California (Oakland Division). Expert Report (February 17, 2004). Declaration (February 24, 2004). Deposition (March 2004).

Monica Pappas, Bill DeVitt, and Monica Pappas Associates

The Healthcare Financial Group, Inc., v. Monica Pappas DeVitt et al., in the District Court, Arapahoe County, Colorado. Filed written expert testimony on lost-profits damages (February 2003).

Ticketmaster Corporation

Evaluated damages from asserted anti-competitive conduct (2003).

Amoco Production Company, Amerada Hess Corporation, and Shell Western E&P, Inc.

Assessed fair market value of CO₂ for payment of royalties. Analyzed issues of market structure of CO₂ industry and marketability of CO₂ at the well (2002).

American Airlines

Conducted analysis of market structure, capacity additions, and pricing in an antitrust suit asserting predatory conduct (2001).

For a Mutual Insurance Company

Conducted market research and performed benchmarking analyses to establish pricing approach and prices for new internet services (2000).

Bass Enterprises Production Company

Assessed fair market rental value of oil-bearing property temporarily taken by the federal government (2000).

Boeing Company

Filed declaration of behalf of Boeing Company (Delta Launch Services, Inc.) for a NASA administrative proceeding regarding release of contract information under the Freedom of Information Act (2000).

Honeywell, Inc.

Conducted study of damages arising from monopolization in the market for ring laser gyroscope inertial navigation systems. Conducted analysis of damages arising from patent infringement (1998).

British Airways, Plc.

Conducted study of the competitive effects of British Airways' proposed alliance with American Airlines. Advised on and assisted with presentations before the European Commission (1998).

HarperCollins Publishers

Brother Records, Inc., et al., v. HarperCollins Pub. Inc., et. al. Filed written expert testimony on damages in libel litigation (December 1997).

Northeast Utilities

Before the Federal Energy Regulatory Commission, OA97-237-000, ER 97-1079-000, and EC97-35-000. Conducted analysis of competition in the New England generation market. Filed affidavit in support of NU's Answer to Requests to Reject or Condition Approval of Market-Based Rates (with Frank A. Felder) (July 1997).

McDonnell Douglas Corporation

McDonnell Douglas Corporation v. National Aeronautics and Space Administration, in the U.S. District Court for the District of Columbia. Filed affidavit describing how the public release of cost and price information affects negotiations and competition in markets for launch services (November 1996).

Pennzoil

Before the Federal Energy Regulatory Commission, Docket No. IS95-35-000. Provided written direct testimony (October 1996) and oral testimony (January 1997) on the cost of capital of oil pipeline facilities.

Pennzoil

Before the Federal Energy Regulatory Commission, Docket No. IS94-37-000 and Docket No. IS 94-23-000. Provided written direct testimony (April 1995) and oral testimony (November 1995).

BP Exploration (Alaska) Inc.

Modeled the costs and benefits associated with increased enhanced oil recovery activities within the Prudhoe Bay Unit (1995).

Burlington Northern Industries-Santa Fe Pacific Corporation

Performed cost-benefit analysis of the proposed Burlington Northern/Santa Fe merger. Analyzed the benefits accruing to shippers from expanded single-line service (1994 – 1995).

PUBLICATIONS AND RESEARCH

“Using Economics to Identify Common Impact in Antitrust Class Certification,” American Bar Association, Section of Antitrust Law, Economics Committee Newsletter, Vol. 11, No. 1, Spring 2011 (with Andrew Lemon).

“Rigorous Analysis to Bridge the Inference Gap in Class Certification” (with Andrew Lemon), *Journal of Competition Law and Economics*, March 2011.

“Oil Price Volatility and Speculation” (with Kenneth Grant), *The Energy Daily*, August 25, 2009.

“Understanding Today's Crude Oil and Product Markets” (with Kenneth Grant and David Ownby), American Petroleum Institute, 2006.

"Understanding Natural Gas Markets" (with Charles Augustine and Bob Broxson), American Petroleum Institute, 2006.

"Regulatory Failure in the California Electricity Crisis" (with Charles Augustine), *The Electricity Journal*, August/September 2003.

"Market Power Analysis in a Dynamic Electric Power Industry" (with F. Felder), *The Electricity Journal*, April 1997.

"Testing the Merits of Providing Customized Risk Management" (with Frank A. Felder and Sarah E. Tobiason), 17th Annual North American Conference of the United States Association for Energy Economics, International Association for Energy Economics, October 1996.

"Competition Between Regulators and Venue Shopping by Natural Gas Pipelines in California" (with Joseph P. Kalt), 14th Annual Conference of the Advanced Workshop in Regulation and Public Utility Economics, May 1995.

"Environmental Regulation and International Competitiveness: What Does the Evidence Tell Us?" (with Adam B. Jaffe, Paul R. Portney, and Robert N. Stavins), *Journal of Economic Literature*, Vol. 33, March 1995.

"Implementation of the Core of a Two Person Exchange Economy without Integer Games or Refinements of Nash Equilibrium" (with Simon Grant, Stephen King, and Ben Polak), *Economics Letters*, 1992.

OTHER REPORTS AND PRESENTATIONS

"Antitrust Analysis of Aftermarkets," American Bar Association, Section of Antitrust, 2010 Spring Meeting (with Edward Schwartz and Paula Render).

"Do Environmental Regulations Impair Competitiveness? A Critical Review of Economic Studies" (with Barry Galef and Kenneth Grant). Prepared by ICF Consulting Group and The Economics Resource Group, Inc., for the Office of Policy Analysis and Review, Office of Air and Radiation, U.S. Environmental Protection Agency, September 1995.

"Indexing Natural Gas Pipeline Rates" (with Amy B. Candell, Joseph P. Kalt, Sheila M. Lyons, and Stephen Makowka). Explored indexing as a form of Incentive regulation for natural gas pipelines and created the Pipeline Producer Price Index that could be used to implement indexing proposals. The Economics Resource Group, Inc., April 1995.

"Environmental Regulations and the Competitiveness of U.S. Industry" (with A. Jaffe, P. Portney and R. Stavins), U.S. Department of Commerce, Economics and Statistics Administration, Washington, DC, NTIS No. PB-93-193514, July 1993.

HONORS AND AWARDS

Jacob K. Javits Fellow, Harvard University, 1987 – 1991


Phi Beta Kappa, University of California, Davis, 1987

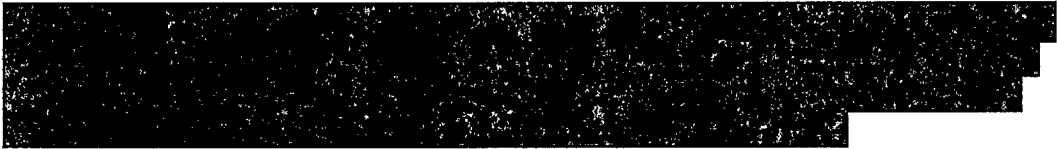
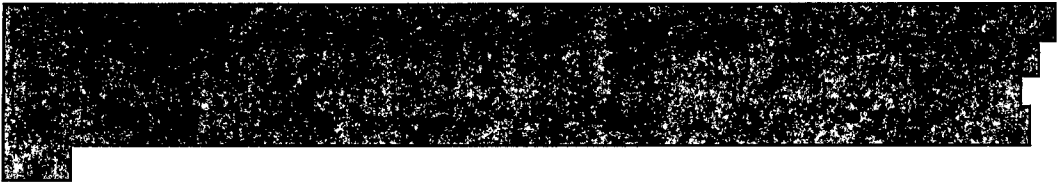
Appendix B
Documents Considered

1. Reports and Depositions

- a. Report of David Blackburn, October 6, 2014
- b. Testimony of Daniel L. McFadden, October 6, 2014
- c. Written Direct Testimony of Michael L. Katz, October 7, 2014
- d. Testimony of Daniel L. Rubinfeld, October 6, 2014
- e. Declaration of Rand Levin, November 20, 2014
- f. Declaration of Paul Robinson, November 20, 2104
- g. Deposition of Daniel Rubinfeld, December 11, 2014
- h. Deposition of Aaron Harrison, December 5, 2014
- i. Deposition of Charles Walk, February 20, 2015
- j. Written Direct Testimony of Simon Fleming-Wood, October 6, 2014
- k. Written Direct Testimony of Stephan McBride, October 14, 2014
- l. Written Rebuttal Testimony of Mike Herring
- m. Rebuttal Testimony of John Hauser

2. Documents

- a. NPD's Music Acquisition Monitor, Q4 '13, SNDEX0096777 – 96820
- b. Nielsen, Music 360 US, October 2013, NAB00006637-6745
- c. Sony Music GDB Strategy, SME Curated Music, SNDEX0214793-SNDEX0214806
- d. 
- e. Glenn Peoples, "Investors Put \$2.4 Billion into Music in 2013, Streaming Tops List," Billboardbiz, January 31, 2014.
- f. "Car Wars", NAB00006329-6371
- g. SoundExchange, Inc.'s Responses and Objections to the First Set of Interrogatories from the Licensee Participants.
- h. Kelly Clarkson, *Stronger*, Phase 1 Marketing Plan, SNDEX0110108-127
- i. Carrie Underwood, *Blown Away*, Marketing Plan, SNDEX0110047-99

- j. Lady Gaga, Marketing Notes as of April 28, 2011, SNDEX0097934-49
- k. Pink, *The Truth About Love*, SNDEX0110186-203
- l. WMG Digital Strategy, SNDEX0119485-9571
- m. 
- n. 
- o. Nate, Rau, "Sony Nashville CEO talks importance of country radio," *The Tennessean*, February 21, 2015, available at <http://www.tennessean.com/story/money/industries/music/2015/02/20/sony-nashville-ceo-talks-importance-country-radio/23768711/>
- p. Joshua D. Angrist and Jorn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricists Companion*, March 2008.
- q. James H. Stock and Mark W. Watson, *Introduction to Econometrics*, (Boston: Addison Wesley, 2003), Chapter 11.
- r. www.pandora.com
- s. www.spotify.com
- t. Federal Register/Vol. 74, No 40/ March 3, 2009
- u. Federal Register/Vol. 74, No. 154/August 12, 2009
- v. Federal Register/Vol. 72, No. 83/May 1, 2007
- w. Federal Register/Vol. 79, No. 80/April 25, 2014
- x. Federal Register/Vol. 74, No. 136/July 17, 2009
- y. Pandora, 2014 Annual Report
- z. Yahoo! Finance
- aa. <http://www.soundexchange.com/service-provider/rates/>.
- bb. Thomas E. Copeland and J. Fred Weston, *Financial Theory and Corporate Policy*, 3rd Ed. (Reading: Addison-Wesley Publishing Company, 1988.
- cc. <http://deliradio101.com/for-artistsbands/streaming-music-royalties>
- dd. The Evolving Role of Radio in Music use and Purchase, August 2013, IHM 0077199 – 77217
- ee. SNDEX0126178-179
- ff. SNDEX0126601

- gg. SNDEX0126177
- hh. SNDEX0126596-600
- ii. SNDEX0126597
- jj. SNDEX0126592-595
- kk. SNDEX0125700

3. **Data**

- a. Sndex0049480-Restricted.xlsx
- b. Sndex0049482-Restricted.xlsx
- c. Sndex0126123_Restricted.xlsx
- d. Sndex0126124_Restricted.xlsx
- e. SNDEX0018269.dta
- f. SNDEX0018378.dta
- g. Sndex0018192.Csv
- h. SNDEX0282314-2318

Appendix C

Comparison of Dr. McFadden's Results to Recreated Results

Attribute	Unweighted (Recreated)	Unweighted (McFadden)	Weighted, US Pop. (Recreated)	Weighted, US Pop. (McFadden)	Weighted, US Users (Recreated)	Weighted, US Users (McFadden)	Weighted, US future Users (Recreated)	Weighted, US future Users (McFadden)
No ads	1.22	1.20	1.32	1.30	1.38	1.36	1.35	1.33
Current Plan	1.20	1.20	1.19	1.19	1.19	1.18	1.19	1.19
Catalog 1M to 10 M	1.35	1.34	1.35	1.35	1.35	1.34	1.35	1.34
Catalog 1M to 20M	1.62	1.57	1.64	1.59	1.64	1.59	1.64	1.60
Catalog 1M to 20M+	1.56	1.51	1.58	1.54	1.59	1.54	1.55	1.52
Playlists: tastemakers to algorithm	0.84	0.84	0.83	0.83	0.85	0.85	0.85	0.86
Playlists: both tastemakers and algorithm	0.53	0.52	0.59	0.57	0.65	0.64	0.62	0.60
Free Plan	0.27	0.28	0.31	0.33	0.29	0.30	0.18	0.21
On demand desktop	0.66	0.67	0.65	0.67	0.64	0.66	0.66	0.68
Mobile service	1.16	1.19	1.15	1.18	1.28	1.30	1.21	1.23
Mobile service randomization	1.54	1.58	1.56	1.60	1.69	1.73	1.63	1.67
Mobile service on demand	1.66	1.69	1.74	1.77	1.92	1.96	1.82	1.85
Offline listening	1.04	1.04	1.16	1.17	1.25	1.25	1.18	1.18
Unlimited skips	1.38	1.37	1.40	1.40	1.47	1.47	1.41	1.41

B

Before the
COPYRIGHT ROYALTY JUDGES
LIBRARY OF CONGRESS
Washington, D.C.

In The Matter Of:

Determination of Royalty Rates for Ephemeral Recording and Digital Performance of Sound Recordings (*Web IV*)

14-CRB-0001-WR (2016-2020)

**CORRECTED WRITTEN REBUTTAL TESTIMONY OF STEVEN R. PETERSON,
PH.D.**

(On behalf of the National Association of Broadcasters and Pandora Media, Inc.)

~~February 23~~ March 24, 2015

TABLE OF CONTENTS

I.	Introduction.....	1
A.	Qualifications.....	1
B.	Assignment	1
C.	Summary of Conclusions.....	1
	1. Conclusions Regarding Dr. Blackburn's Testimony	1
	2. Conclusions Regarding Dr. McFadden's Testimony.....	5
	3. Dr. Rubinfeld's "Interactivity Adjustment" Is Not Supported by Dr. McFadden's Results.....	5
II.	Dr. Blackburn's Suggestion that High Commercial Statutory License Fees Have Not Impeded Webcaster Growth Is Unfounded.....	7
A.	Webcasters Subject to Commercial Statutory Rates Exit the Webcasting Industry at a Greater Rate than Dr. Blackburn's Analysis Indicates	8
B.	Counts of Webcasters Cannot Demonstrate the Health of the Webcasting Industry	12
C.	Dr. Blackburn Overstates the Investment in Statutory Webcasting	16
III.	Dr. Blackburn's Analyses of Promotion and Purported Cannibalization Are Flawed.....	17
A.	The Opportunity Cost of Licensing a Stream of a Sound Recording Is a Key Factor in Assessing Competitive License Rates	17
B.	There is Substantial Evidence That Statutory Webcasting Promotes Music Sales	18
	1. There Is Substantial Evidence That Record Labels Treat Terrestrial Radio and Simulcasts as Promotional.....	18
	2. There Is Substantial Evidence that Plays on Custom Webcast Services Like Pandora Also Promote Music Sales	20
	3. Dr. Blackburn's Analysis of Promotion Is Incorrect and Contradicts His Testimony Regarding the Irrelevance of Correlation between Streaming and Sales	22

C.	Dr. Blackburn's Analysis of Purported Cannibalization of License Fees from Subscription Services Fails to Account for Alternative "Free" Sources of Music and Consumers' Low Willingness to Pay for Music Services	23
1.	Dr. Blackburn's Analysis of Substitution between Statutory Streaming Services and Subscription On-Demand Services Is Particularly Inapplicable to Simulcasts of Terrestrial Radio	24
2.	Dr. Blackburn's Analysis of the Substitution of Custom Webcasting for Subscription Services Fails to Account for Consumers' Options That Are Closer Substitutes for Subscription On-Demand Services than Custom Webcasting	25
IV.	Dr. Blackburn's Discussion of Webcasters Delaying Profits to Invest in Market Share Does Not Provide an Economic Justification for a Rate Increase	28
V.	Dr. McFadden's Analysis Demonstrates that Many Consumers Have a Low Willingness to Pay for Streaming and De <u>Does</u> Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"	30
A.	Dr. McFadden's Results Show That a Significant Share of Consumers Have Low Willingness to Pay for Streaming	30
B.	Dr. McFadden's Results Do Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"	37

Written Rebuttal Testimony of Steven R. Peterson, Ph.D.

I. Introduction

A. Qualifications

1. My name is Steven R. Peterson. I am an Executive Vice President at Compass Lexecon. Compass Lexecon is an economics consulting firm that specializes in the economics of competition, finance, and regulation, among other areas. I received my A.B. in economics from the University of California, Davis, in 1987 and my Ph.D. in economics from Harvard University in 1992. While at Harvard, my areas of specialization were economic theory and industrial organization. Industrial organization is the study of the interactions of firms that are able to strategically influence their environments. Industrial organization includes the study of market power and anticompetitive conduct. I have also served as an adjunct faculty member in the Department of Economics at Northeastern University, teaching courses on government and business and energy economics & policy.
2. During my career, I have consulted on the economics of antitrust and competition, mergers, estimation of damages, and the economics of valuation, and on regulation and public policy. I have also worked in the area of intellectual property and have testified on market power issues arising from the licensing of intellectual property. A copy of my curriculum vitae is attached as Appendix A.
3. Compass Lexecon is being compensated for my time in this matter at the rate of \$725/hour. My compensation does not depend in any way on the outcome of this proceeding.

B. Assignment

4. Counsel for the National Association of Broadcasters and counsel for Pandora Media, Inc., have asked me to analyze certain aspects of the written direct testimony offered by Dr. Blackburn and Dr. McFadden. Specifically, I have been asked to comment on Dr. Blackburn's analysis of the streaming marketplace and to assess the implications of Dr. McFadden's survey analysis for establishing license fees at issue in this proceeding. In particular, I have been asked to evaluate whether Dr. McFadden's results corroborate Dr. Rubinfeld's calculation of the "interactivity adjustment" Dr. Rubinfeld uses to adjust benchmark non-statutory interactive license fees. A list of the materials I and my staff have reviewed and relied upon in the course of preparing this report is attached as Appendix B.

C. Summary of Conclusions

1. Conclusions Regarding Dr. Blackburn's Testimony

5. Dr. Blackburn claims that webcaster entry and survival rates show that the statutory webcasting industry is healthy and that it is unlikely that commercial statutory license rates are "choking off growth."¹ Dr. Blackburn's conclusions are based on unsound economic reasoning and lack evidentiary support. The economic errors in his analysis include the following:
 - a. The standard that Dr. Blackburn uses to assess the reasonableness of rates, that rates not "choke off" growth, is economically meaningless. Even if rates were set at monopolistic levels, they would not "choke off" all growth. Thus, Dr. Blackburn's analysis based on this standard does not provide any economic basis to find that prevailing license rates – or SoundExchange's proposed rates – are economically reasonable or reflect the workings of an effectively competitive market.
 - b. Dr. Blackburn's webcaster counts and analysis of survival rates cannot support his conclusions regarding commercial statutory rates because they include hundreds of webcasters who pay only the minimum license fees or are subject to rates that are significantly below commercial statutory rates. When Dr. Blackburn's analysis is limited to types of webcasters generally paying per-performance or usage rates at or near the commercial statutory rates, both webcaster counts and survival rates decrease. When properly analyzed, Dr. Blackburn's data show that commercial statutory license fees are associated with a higher risk that a webcaster will cease webcasting than the survival rates that Dr. Blackburn presents.
 - c. Analysis of the growth of webcasting using SoundExchange's payment data illustrates that the greatest growth in webcasting has occurred not from webcasters paying commercial statutory rates but from so-called pureplay webcasters, which pay rates that are substantially below those paid by other commercial webcasters. Even there, substantially all of the growth has been attributable to [REDACTED]
[REDACTED]
[REDACTED] II.
 - d. Dr. Blackburn's reliance on a purported increase in webcasters from 1,412 in 2006 to 2,516 in 2013² is economically meaningless. Dr. Blackburn provides no benchmark against which to gauge whether this growth is consistent or inconsistent with the growth that would occur in an effectively competitive market, so no economic conclusion can be drawn from these counts. In any event, Dr. Blackburn's count of 2,516 webcasters includes over 1,100 webcasters that only rarely pay usage rates at or near the commercial statutory rates because they generally pay minimum license fees

¹ Report of David Blackburn, October 6, 2014 (hereinafter "Blackburn"), ¶ 27 and ¶ 55.

² Blackburn, ¶ 26.

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or are subject to usage rates below the commercial statutory rates. Thus, the counts of webcasters actually paying rates at or near the commercial statutory rates are far lower than the counts that Dr. Blackburn presents.

- e. Finally, Dr. Blackburn overstates the amount of investment in statutory webcasting.³ Of the \$839 million number he cites, only about half relates to Internet radio as opposed to on-demand and video services, and of this half, approximately 90% relates to a single public offering of Pandora stock. A still higher percentage was raised by firms that are not responsible for paying full commercial statutory performance rates.
6. Dr. Blackburn's claim that "there is little evidence that statutory webcasting promotes the sales of digital or physical media" is incorrect.⁴ In fact, there is extensive evidence that statutory webcasting, including both simulcasts of AM/FM radio broadcast programming and customized webcasting services like Pandora, is promotional.
- a. The documentary record in this matter shows that streaming and AM/FM radio are important sources of music discovery for listeners.⁵ Moreover, financial records indicate that the record labels for which SoundExchange produced data spend [REDACTED] a year promoting music on AM/FM radio and encouraging AM/FM stations to play their artists' music.⁶ This level of expenditure indicates industry expenditures of [REDACTED]. The labels would only make these expenditures if they believed they provide a positive return. Moreover, there is no reason to claim that the promotional benefits of AM/FM radio are lost when a listener chooses to listen to the same programming online rather than over the air.
 - b. There is also substantial evidence that custom webcasting services, like Pandora, are promotional. This evidence includes both [REDACTED] as well as a well-controlled experiment that Pandora performed that shows that playing songs on Pandora

³ Blackburn, ¶ 21.

⁴ Blackburn, ¶ 89.

⁵ See, e.g., [REDACTED].

⁶ See SNDEX0282314-2318, SNDEX0126178-179, SNDEX0126596-600, SNDEX0126597, SNDEX0126592-595, SNDEX0126601, and SNDEX0126177.

⁷ See, e.g., [REDACTED].

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causally leads to increased average music sales. In fact, the study Pandora performed uses an approach Dr. Blackburn endorses.⁸

7. Dr. Blackburn's analysis purporting to show that statutory webcasting cannibalizes revenue from subscription streaming is flawed. Dr. Blackburn's analysis rests on the suggestion that if ad-supported statutory webcasters were less attractive, many of the listeners leaving them would sign up for services with a monthly fee.⁹ His analysis, however, does not account for other sources of competition to both free custom services like Pandora and to subscription streaming services. The presence of these competing services means that those leaving custom webcasting need not subscribe to a service and that there are other services more likely to cannibalize subscription services than custom webcasters. Thus, Dr. Blackburn's analysis is [REDACTED]

[REDACTED]

1. Dr. Blackburn also fails to account for evidence that many users of custom webcasting could switch to terrestrial radio should custom webcasting disappear or be degraded.¹¹ Finally, Dr. Blackburn does not take into account that many consumers are quite averse to paying monthly subscription fees and have a low willingness to pay for music. These consumers are unlikely to subscribe to a service with a monthly fee.

8. Dr. Blackburn's claims regarding competition between statutory streaming and subscription services are particularly inapplicable to radio broadcasters that simulcast their terrestrial broadcasts – a significant segment of statutory webcasting that Dr. Blackburn all but ignores. Simulcasts are not customized and offer the same or substantially identical programming to the programming offered on the corresponding over-the-air radio broadcast. As such, a simulcast service resembles terrestrial radio much more closely than a subscription on-demand service – or even custom webcasting. Dr. Blackburn himself recognizes this fundamental distinction.¹²

⁸ Blackburn, ¶ 91 ("one should conclude, as an economic matter, that statutory webcasting leads to additional sales of recorded music only if there are sales made ... that would not have otherwise been made, absent the streaming. That is, if the play(s) did not happen, there would have been fewer sales.").

⁹ Blackburn, ¶ 99.

¹⁰ [REDACTED]

¹¹ Written Direct Testimony of Simon Fleming-Wood, ¶ 15 ("our [Pandora's] closest competitor, and greatest opportunity for converting new listeners, is the broadcast radio industry - including traditional terrestrial (AM/FM) radio, and satellite radio.").

¹² Blackburn, ¶ 101.

9. Dr. Blackburn suggests Internet startups, such as Pandora, intentionally delay their profitability and could increase profitability if desired. This claim is contrary to basic economic principles and cannot provide economic support for a rate increase. A rational, profit-seeking firm will not “delay” profitability. Dr. Blackburn offers no evidence that Pandora has not acted to maximize its profits or has acted sub-optimally, leaving money on the table. Moreover, cost increases always lead to reduced profitability and lower incentives to invest in the future. Thus, any suggestion that a firm, such as Pandora, could increase its profitability in order to cover increased costs without damaging its business and future prospects for achieving already uncertain expected profits is economically unfounded.

2. Conclusions Regarding Dr. McFadden’s Testimony

10. Dr. McFadden estimates the average willingness to pay for a number of characteristics and features of interactive and non-interactive services based on a survey of 983 individuals. The survey required respondents to perform 15 choice tasks in which they chose among three hypothetical streaming services with different prices and features. Using these responses, Dr. McFadden estimated each respondent’s willingness to pay for each feature. From those estimates, he computed an estimate of the weighted average willingness to pay of the respondents. As Dr. McFadden notes, the survey results reveal that a significant portion of respondents to his survey have a low willingness to pay for streaming.¹³ In fact, Dr. McFadden’s study shows that many respondents do not just have a low willingness to pay for many features of music streaming, they have a *negative willingness to pay for many features* (i.e., these respondents prefer services without these features). Of course, estimates of the average willingness to pay for features can never describe individual behavior, which is driven by the individual variation around the average. This is particularly the case here. The estimates of the average willingness to pay for features are all positive, which indicates that individuals will be willing to seek out and pay for features. Many of the individual estimates of willingness to pay for features, however, indicate an aversion by some respondents to those features. Thus, the average masks the divergent willingness to pay of consumers.
11. The estimates of average willingness to pay cannot provide insight into market prices or how consumers will respond to market prices. In fact, the estimated average willingness to pay for the features of an on-demand subscription service (as estimated by Dr. McFadden) is lower than the typical \$9.99 price of a subscription service, even accounting for all of the features included in music service. Of course consumers will pay only for the features of a service that they cannot obtain for free in the marketplace. If everyone had the average willingness to pay for the features of a service such as Spotify Premium, nobody would subscribe to such a service at the typical subscription price of \$9.99. Only a relatively small cohort of consumers who value the features of subscription streaming services substantially above the estimated average levels would be willing to pay \$9.99. Thus, the estimates of average willingness to pay for features of streaming services are not a useful guide to consumer behavior or market price levels.

¹³

McFadden, ¶ 10.

3. Dr. Rubinfeld's "Interactivity Adjustment" Is Not Supported by Dr. McFadden's Results

12. Dr. Rubinfeld calculates an "interactivity adjustment" based on the ratio of the average retail subscription prices of interactive and statutory non-interactive services.¹⁴ Dr. Rubinfeld uses the "interactivity adjustment" to adjust downward the license fees paid by his benchmark interactive services to the license fees he proposes for statutory non-interactive licensees. Dr. Rubinfeld explains that the purpose of his adjustment is to ensure that per-person license fees are about the same share of retail subscription prices for both interactive and non-interactive licensees.¹⁵ I understand that the flaws with this approach are discussed in detail in the Written Rebuttal Testimony of Michael Katz (among others).
13. Dr. Rubinfeld asserts that Dr. McFadden's estimates of consumers' willingness to pay for the characteristics of interactive versus non-interactive services are "generally consistent" with the "interactivity adjustment" he calculates from retail market prices.¹⁶ What he appears to mean by this is that the willingness to pay for the features of an interactive service (as calculated by Dr. McFadden) is roughly double the willingness to pay for the features of a non-interactive service. This result purportedly supports his calculation because it is approximately equal to the retail-price ratio defining his "interactivity adjustment." Despite the similar numerical results, Dr. McFadden's estimates of willingness to pay cannot corroborate Dr. Rubinfeld's calculation for two reasons. First, the arithmetic of Dr. Rubinfeld's license fee adjustment has solely to do with the relationship between subscription prices and license fees for statutory and interactive services. On its face, it has nothing to do with the average willingness to pay for features of streaming services, which are not economically related to retail subscription prices. Obviously, if estimates of average willingness to pay are unrelated to market prices, there is no reason for the *ratio* of willingness to pay and the *ratio* of prices for interactive and statutory non-interactive services to be the same. Any similarity is fortuitous. In any event, the fact that the two calculations yield a similar numerical result does not imply that Dr. McFadden's results support Dr. Rubinfeld's calculation of an "interactivity adjustment" or that Dr. Rubinfeld's use of the "interactivity adjustment" is economically justified.
14. Second, Dr. Rubinfeld's two calculations of the "interactivity adjustment" value different bundles of features. Many of the features that form part of the package sold by subscription services – for example large song libraries and mobile service – are available for free in the marketplace. The retail prices of the subscription services that Dr. Rubinfeld uses represent the market value of the features that are *not* available for free in the marketplace – that is, the "extras" that one gets for subscribing that are not included in the free service. What Dr. Rubinfeld's retail subscription price ratio reveals, therefore, is the ratio of what consumers pay for the "extras" available from a non-interactive

¹⁴ Rubinfeld, ¶ 168.

¹⁵ Rubinfeld ¶ 169.

¹⁶ Rubinfeld, ¶ 171.

subscription service (lack of advertising, for example) to what they pay for the even larger group of extra features available from an interactive subscription service (mobile on-demand song choice, most notably). When calculating the willingness to pay for an interactive service relative to a statutory non-interactive service using estimates of average willingness to pay, Dr. Rubinfeld did not just use the values of the “extras” one gets by subscribing, but the willingness to pay for all of the features embodied in the services, whether they are available for free in the market or not.¹⁷ This is a broader and fundamentally different set of features than those reflected in the retail prices Dr. Rubinfeld uses to estimate the “interactivity adjustment.” That the two methods, which value different sets of features, produce roughly the same results is pure happenstance. One calculation cannot support the other.

15. Dr. Rubinfeld uses Dr. McFadden’s analysis solely to support the calculation of the “interactivity adjustment.” Dr. McFadden’s analysis cannot provide the support Dr. Rubinfeld claims, however. As a result, Dr. McFadden’s analysis is not relevant to SoundExchange’s rate proposal.

II. Dr. Blackburn’s Suggestion that High Commercial Statutory License Fees Have Not Impeded Webcaster Growth Is Unfounded

16. Dr. Blackburn asserts that the streaming industry is experiencing entry by new webcasters and has further prospects for growth.¹⁸ He also asserts that once they enter, webcasters have a good probability of survival (*i.e.*, not failing and exiting the industry).¹⁹ Based on his findings, Dr. Blackburn concludes: “[i]f licensing rates were choking off growth, we would not likely see continued growth in the number of firms operating in the industry, or the historical success of firms to survive once they have entered.”²⁰ To the extent Dr. Blackburn means to defend the existing rates – or SoundExchange’s even higher rate proposal – on the grounds that the rates will not “choke off growth” in statutory webcasting, that conclusion is both economically irrelevant and factually baseless.
17. Dr. Blackburn’s standard deems rates to be acceptable if they are not “choking off growth.” Notably, Dr. Blackburn does not claim that the growth in webcasting is unaffected by license rates or that higher license rates do not slow growth relative to lower rates. Instead, he represents only that there is growth in the number of webcasters, but this observation alone is economically meaningless. Moreover, I understand that the purpose of this proceeding is to identify rates that approximate the rates that a willing buyer and willing seller would negotiate in an effectively competitive marketplace – not to set the rate at the highest level possible that will not “choke off” growth or avoid driving services out of business. Of course, rates that do not “choke off growth” need not

¹⁷ Rubinfeld, Exhibit 14.

¹⁸ Blackburn, ¶ 17.

¹⁹ Blackburn, ¶ 28.

²⁰ Blackburn, ¶ 27.

be effectively competitive or otherwise reasonable. Monopolists raise prices above the competitive level, sometimes materially so, but they do not raise prices to levels that drive all of their customers away. Even a monopolist setting license fees would not raise them high enough to entirely choke off growth in an otherwise growing industry. "Choking off" all growth would effectively kill the geese that lay the golden eggs.

A. Webcasters Subject to Commercial Statutory Rates Exit the Webcasting Industry at a Greater Rate than Dr. Blackburn's Analysis Indicates

18. Dr. Blackburn claims that "licensing costs in the industry have not deterred growth,"²¹ and suggests that current rates are reasonable because "over the recent past, survival rates for statutory webcasters have generally been right in line with those of all businesses more generally."²² In making these claims, however, he incorrectly examines survival rates of *all* webcasters rather than those types that generally pay rates at or near the commercial statutory rates, which is the relevant analysis. An analysis of the relevant set of webcasters reveals survival rates that are much lower than those that Dr. Blackburn presents.
19. As an initial matter, Dr. Blackburn offers no analysis to support his conclusion that webcasters should have survival rates that are in line with businesses generally. There is no reason to believe that statutory webcasters face the same risks of failure as firms generally. Thus, the comparison of webcaster survival rates to the survival rates of businesses generally cannot provide insight into the effects of high commercial statutory rates.
20. Moreover, Dr. Blackburn incorrectly analyzes as a single group different types of webcasters that pay many different types of rates, including hundreds that pay rates that are significantly lower than the commercial statutory rates. For example, Dr. Blackburn incorrectly includes noncommercial webcasters in his survival analysis. The statutory rates for these webcasters permit streaming of no more than 159,140 aggregate tuning hours per month without requiring additional payment beyond a \$500 minimum annual fee,²³ and most noncommercial webcasters stream at levels low enough that this fixed amount is all they pay.²⁴ Above that threshold, the statutory rates require noncommercial webcasters to pay the same commercial usage rates as those that apply to commercial webcasters or broadcasters.²⁵ According to SoundExchange's payment data, however, while some noncommercial webcasters exceed the stated threshold, [REDACTED] pay commercial usage rates.²⁶ In 2012, for example, [REDACTED] noncommercial [REDACTED] paying usage rates paid the commercial webcaster usage rates. In 2013, [REDACTED]

²¹ Blackburn, ¶ 25.

²² Blackburn, ¶ 28.

²³ 37 C.F.R. §§ 380.3(a)(2)(i), 380.22(b).

²⁴ See, e.g., Blackburn, ¶ 29.

²⁵ 37 C.F.R. §§ 380.3(a)(2)(ii), 380.22(b).

²⁶ SNDEX0049480 (NAB Ex. 41).

noncommercial [REDACTED] paid statutory rates above the \$500 minimum fee, paying total fees of \$[REDACTED]. Instead, almost all of these somewhat larger noncommercial webcasters pay usage rates that are available under a Webcaster Settlement Act agreement²⁸ and are a fraction of the commercial usage rates.²⁹

21. In addition to including noncommercial webcasters in the survival rate analysis, Dr. Blackburn also incorrectly includes pureplay and small webcasters, which pay rates that are substantially below the commercial statutory rates.³⁰ Of course, if the goal is to find out whether license fees at or near the commercial statutory rates are leading to low survival rates, it is necessary to focus on webcasters that are paying rates at or near the commercial statutory rates that are at issue here. Thus, by combining all webcasters regardless of the rates they generally pay, Dr. Blackburn has done the wrong analysis.
22. It is also not clear that Dr. Blackburn has used reliable data for his survival analysis. Dr. Blackburn conducts his survival analysis on a highly processed dataset where judgments have been made regarding webcasters' identities and whether they should be considered to still be in operation. Without information on how these judgments were made, there is no way to ascertain the reliability of the data. Notably, the data on the names and types of webcasters present in the survival data match SoundExchange's payment data relatively well for the period 2010-2012. However, a substantial number of firms that appear in the survival data in 2013 do not appear in the payment data, indicating they did not pay license fees in 2013. In addition, for the years 2007-2009, there are many webcaster names in the payment data that do not appear in the survival data and vice versa. Moreover, the license types for webcasters in the survival data are different than those shown for the same webcasters in the payment data, when a match can be found. Dr. Blackburn has provided no information on the methods used to create the dataset used for his survival analysis, particularly for the years 2007-2009 where the survival data are a poor match to payment data. Without information describing how the survival data have been manipulated, it is not possible to validate the survival data prior to 2010 using SoundExchange's payment data.

²⁷ SNDEX0049480 (NAB Ex. 41).

²⁸ Federal Register /Vol. 74, No. 40 /Tuesday, March 3, 2009 /Notices at 9293-9307.

²⁹ SNDEX0049480 (NAB Ex. 41). Dr. Rubinfeld suggests, in the absence of benchmark agreements applicable to noncommercial broadcasters to continue the existing rates, a \$500 minimum fee and commercial rates for webcasting beyond the aggregate tuning hour cap (Rubinfeld, ¶ 246). The payment history of the noncommercial webcasters, however, indicates that Dr. Rubinfeld's proposal does not, in fact, continue the status quo.

³⁰ Many webcasters pay SoundExchange under a settlement agreement covering their webcasting activities. Thus, many webcasters have not and do not pay precisely the rates described in the Web II or Web III proceedings. By "rates near commercial statutory rates," I mean rates that are approximately at the statutory level for commercial webcasters established in the Web II and Web III proceedings. These webcasters are broadcasters, small broadcasters, commercial webcasters (CRB), and commercial webcasters (WSA).

23. If we use the same data Dr. Blackburn used but correct the analysis so that it includes only types of webcasters generally paying usage rates at or near the commercial statutory webcaster rates, we find that these webcasters are less likely to survive than Dr. Blackburn's analysis shows. This result is shown in Figure 1. The top panel of Figure 1 reproduces Table 3 from Dr. Blackburn's testimony. The panel shows "the survival rates, by year, for statutory webcasters operating in any given year."³¹ For example, the top row shows that of the webcasters operating in 2006, 39% were still operating in 2013.

Figure 1
Correction of Dr. Blackburn's Survival Analysis

Recreation of Dr. Blackburn's Table 3: Webcaster Licensee Rate of Survival until 2013
(2006-2013)

	2006	2007	2008	2009	2010	2011	2012	2013
2006	100%	87%	61%	53%	43%	42%	42%	39%
2007		100%	68%	60%	46%	45%	44%	41%
2008			100%	82%	61%	58%	56%	53%
2009				100%	72%	66%	64%	58%
2010					100%	86%	81%	75%
2011						100%	89%	79%
2012							100%	85%
2013								100%

Recreation of Dr. Blackburn's Table 3 for Types of Webcasters Paying At or Near the
Commercial Statutory Rate

	2006	2007	2008	2009	2010	2011	2012	2013
2006	100%	85%	57%	44%	30%	27%	27%	25%
2007		100%	66%	53%	34%	32%	31%	28%
2008			100%	77%	49%	45%	43%	40%
2009				100%	63%	57%	54%	48%
2010					100%	85%	79%	70%
2011						100%	87%	75%
2012							100%	82%
2013								100%

Source: Sndex0049482-Restricted.xlsx; Federal Register, Vol. 74, No 40, March 3, 2009; Federal Register, Vol. 74, No. 154, August 12, 2009; Federal Register, Vol. 72, No. 83, May 1, 2007, Federal Register, Vol. 74, No. 136, July 17, 2009

Notes: 1) Webcaster types paying at or near the commercial statutory usage rate include entities under the "BRD", "CW-CRB", "CW-WSA", "SMBRD", and "PPWC"-Subscription license subtypes.

24. The bottom panel of Figure 1 shows Dr. Blackburn's survival analysis limited to the types of webcasters that pay usage rates at or near the commercial statutory rates.³² Note that with the exception of the first entry in each row, every entry in the middle panel of Figure 1 is lower than the corresponding entry in the top panel showing Dr. Blackburn's analysis. This indicates that the survival rate for webcasters paying rates at or near the

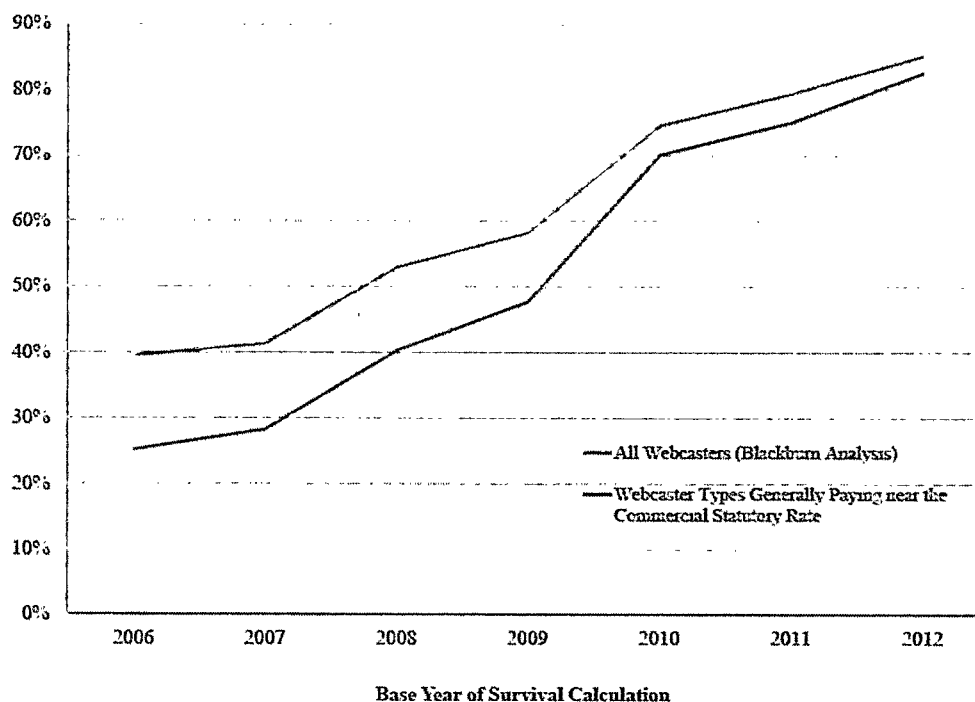
³¹ Blackburn, ¶ 27.

³² Some webcasters of these types pay minimum license fees.

commercial statutory rate survive at lower rates (*i.e.*, fail at higher rates) than webcasters generally.

25. Figure 2 compares the survival rates in 2013 of webcasters paying at or near the commercial statutory rate and of all webcasters as calculated by Dr. Blackburn. The figure shows that types of webcasters paying at or near commercial statutory usage rates (blue line) survive at a lower rate than Dr. Blackburn reports for all webcasters (red line). The lines are farther apart to the left of the chart where firms have had a longer time to fail, and the higher failure rate has more years to compound before the end of the dataset in 2013. With fewer years for the different failure rates to influence survival, the lines grow closer together as they move to the right.

Figure 2
2013 Survival Rate Comparison: Types of Webcasters Paying At or Near the Commercial
Statutory Rate v. Dr. Blackburn's Analysis of All Webcasters
2006-2012



Source: Sndex0049482-Restricted.xlsx; Federal Register, Vol. 74, No. 40, March 3, 2009; Federal Register, Vol. 74, No. 154, August 12, 2009; Federal Register, Vol. 72, No. 83, May 1, 2007; Federal Register, Vol. 74, No. 136, July 17, 2009.

26. Dr. Blackburn's analysis of webcaster survival rates incorrectly combines webcasters paying approximately commercial statutory rates and webcasters paying minimum license fees and usage rates below commercial statutory rates. The survival rates of these two groups are different. However, only the survival of webcasters paying license fees at or near the commercial statutory rates can possibly tell us about the effects of the

commercial statutory rates on webcaster survival. Therefore, Dr. Blackburn's analysis of all webcasters blended together is not applicable to commercial broadcasters and webcasters and overstates the survival rates of the relevant types of webcasters.

27. More importantly, however, Dr. Blackburn's analysis is not economically relevant to establishing rates that are effectively competitive. Effectively competitive rates are not rates that are sufficiently low to not choke off growth. Effective competition would drive rates toward the copyright owners' marginal cost of allowing webcasts to occur.

B. Counts of Webcasters Cannot Demonstrate the Health of the Webcasting Industry

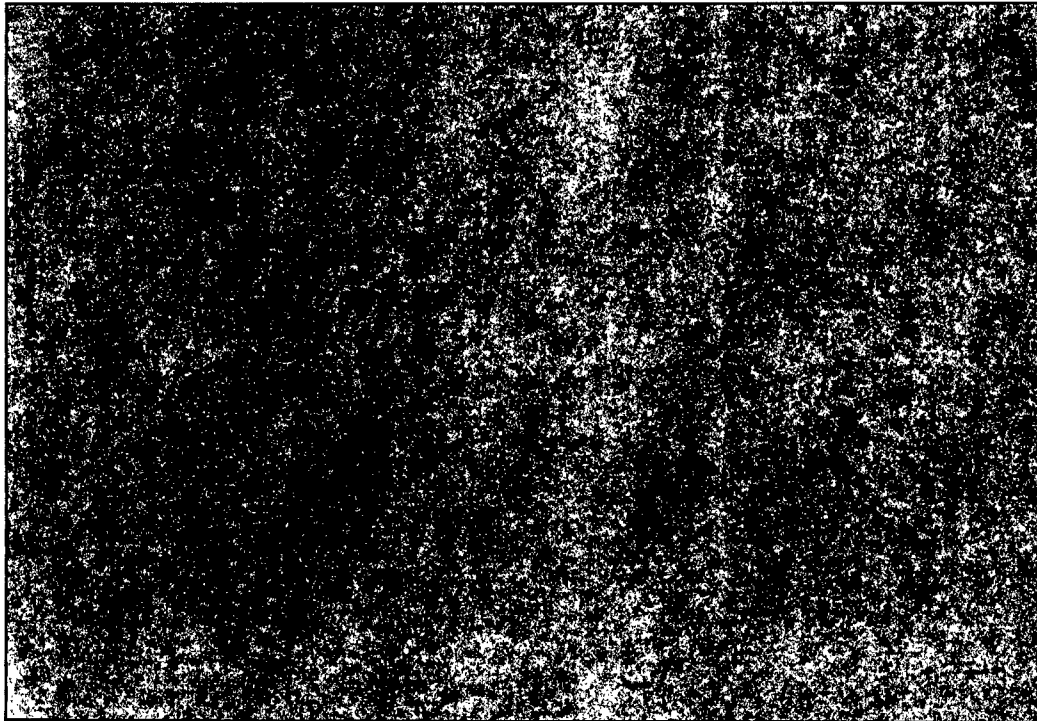
28. Dr. Blackburn touts the fact there has been growth in the number of statutory webcasters according to SoundExchange's counts.³³ He suggests that the rate of entry of webcasters and the increasing number of webcasters supports his conclusion that high license fees are not choking off growth in the industry.³⁴ Dr. Blackburn's analysis cannot support his conclusions, however. Statements such as "[a]t the end of 2013, there were 2,516 webcasters operating under statutory license, up from 1,412 in 2006" are meaningless without comparison to some benchmark. Dr. Blackburn's analysis does not tell us whether 2,516 webcasters are a lot of webcasters or a few webcasters relative to the number that would exist if rates were effectively competitive. Thus, 2,516 webcasters may sound like a lot of webcasters, but with no benchmark for comparison, Dr. Blackburn's analysis provides no way to know how many webcasters there should be.
29. Dr. Blackburn's analysis of webcaster counts also fails to account for differences among webcasters. Only an analysis of webcasters paying roughly the commercial statutory usage rate can provide insight into the effects of that rate on webcasters. Limiting the analysis to these types of webcasters reduces Dr. Blackburn's tally of webcasters by more than 1,100.
30. Figure 3 illustrates that different types of webcasters are not equally important in terms of their contribution to SoundExchange's royalty revenue from statutory webcasters. For each type of webcaster, the figure shows the share of license fees paid to SoundExchange and the share of all webcasters that the type represents. If each type of webcaster paid the overall average level of license fees, the bars showing the share of license fees and the share of webcasters would be the same height for each type of webcaster. This is clearly not the case because different types of webcasters pay different usage rates and some types of webcasters have relatively few streams and generally pay only the minimum license fee. The figure shows noncommercial webcasters account for 41% of webcasters by licensee count, but only [REDACTED]% of license fees – not 41% of license fees. Broadcasters account for 37% of all webcasters, and pay about [REDACTED]% of license fees to SoundExchange. By contrast, [REDACTED] of statutory license fees are paid by non-

³³ These counts rely on the same dataset as Dr. Blackburn's survival analysis and, therefore, are subject to the same issues of data reliability described above.

³⁴ Blackburn, ¶ 26.

subscription pureplay webcasters, and [REDACTED]

Figure 3 (RESTRICTED)
Share of License Fees and Share of Total Webcasters by Type
2012



Source: Sndex0049480-Restricted.xlsx (NAB Ex. 41); Sndex0049482-Restricted.xlsx

Note: 1) Broadcasting includes BRD; commercial webcasting includes CW-CRB and CW-WSA; noncommercial webcasting includes NC-MICRO, NCEDW, NC-CRB, NC-WSA, and CPB; subscription pureplay includes PPWC (Sub); non-subscription pureplay includes PPWC (Non-Sub), PPWC (Non-Sub & Sub), and PPWC (Sub and Non-Sub); small webcasting includes SMPPWC, SMW, and SWSA; small broadcasting includes SMBRD license subtypes. Excludes other types of licenses.

31. Figure 3 shows that looking at webcaster counts alone presents a highly misleading picture of the statutory webcasting industry because the bulk of royalties are paid by a small share of webcasters – and primarily by non-subscription pureplay webcasters that pay royalties at rates substantially below commercial statutory rates. In contrast, many of the entrants that Dr. Blackburn describes are noncommercial webcasters, which pay a very small share of total license fees.
32. Figure 4 shows the license fees paid by seven types of webcasters between 2007 and 2013. It is clear that license fees paid by non-subscription pureplay webcasters grew at a much greater rate than did license fees paid by other types of webcasters. This suggests that the increase in webcasting is primarily the result of growth by commercial webcasters paying rates substantially below the commercial statutory rates rather than by those generally paying at or near the commercial statutory rates.

Figure 4 (RESTRICTED)
License Fees Paid by Type of Webcaster
 Millions of Dollars
 2007-2013



Source: Sndex0049480-Restricted.xlsx (NAB Ex. 41); Sndex0126123_Restricted.xlsx (NAB Ex. 42)

Notes: 1) For years 2007-2009, broadcasting includes BRD-I; commercial webcasting includes CW-CRB, CW-II; noncommercial webcasting includes NC MICRO-II, NCW, NCEDW-II, NCW-II, NCW-CRB, and CPB; subscription pureplay includes PPWC-II (SUB); non-subscription pureplay includes PPWC-II (NON-SUB), and PPWC-II (SUB & NONSUB); small webcasting includes SPPWC-II (NON-SUB), SPPWC-II (SUB), SPPWC-II (SUB & NONSUB), and SWSA; small broadcasting includes SMBRD-I. Excludes other types of licenses.

2) For 2010-2013, Broadcasting includes BRD; commercial webcasting includes CW-CRB and CW-WSA; noncommercial webcasting includes NC-MICRO, NCEDW, NC-CRB, NC-WSA, and CPB; subscription pureplay includes PPWC (Sub); non-subscription Pureplay includes PPWC (Non-Sub); small webcasting includes SMPPWC, SMW, and SWSA; small broadcasting includes SMBRD. Excludes other types of licenses.

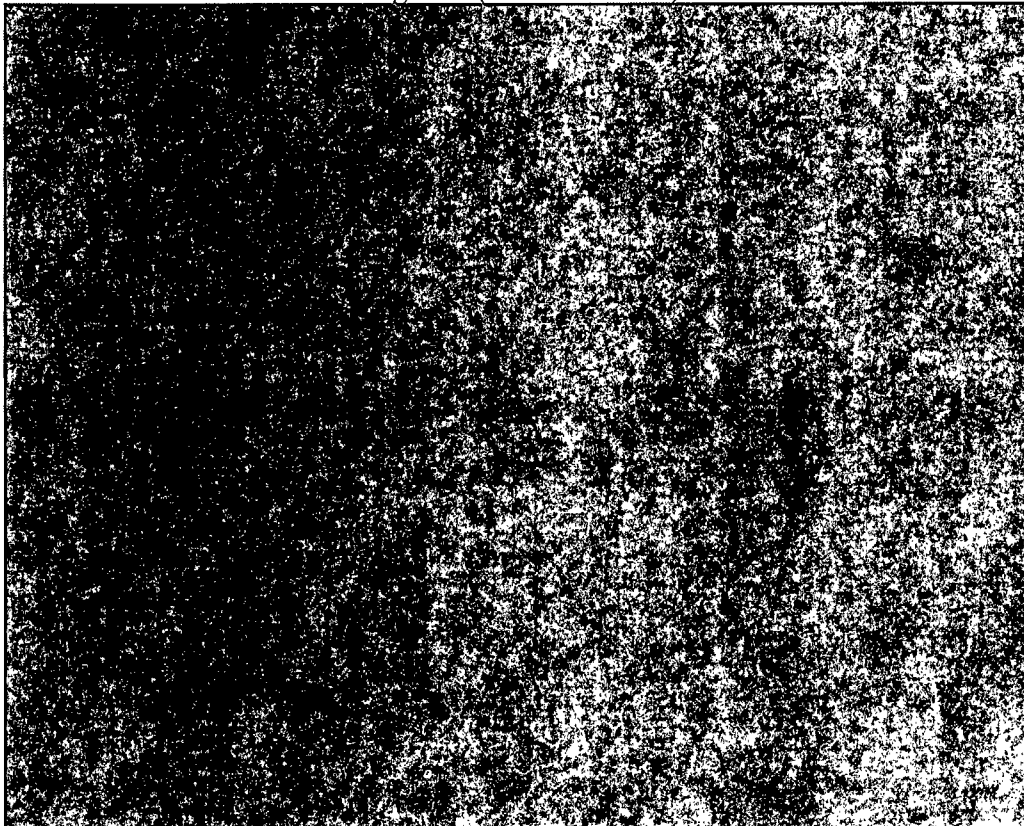
33. Of course, a substantial portion of the increase in license fees paid between 2007 and 2013 is the result of increased license rates, which generally increased each year for webcasters subject to a usage rate. Thus, the increases in license fees in Figure 4 represent a combination of increased license rates and increased output of webcasting. Figure 5 removes the impact of increasing license rates and shows what license fees would have been for the categories of webcasters making relatively larger license payments had license rates remained at their 2007 levels, all else equal.³⁵ Thus, the

³⁵

Figure 5 shows adjusted fees only for the four largest types of webcasters.

increases shown in the figure are the result of increased streaming rather than the result of increased license rates. Notably, the increases in streaming by the types of webcasters that are subject to the commercial statutory rates had a much smaller increase in webcasting than did pureplay webcasters, which had the greatest increases in the quantity of webcasting.³⁶ Once again, there are a few non-subscription pureplay webcasters, but [REDACTED].

Figure 5 (RESTRICTED)



Source: Sndex0049480-Restricted.xlsx (NAB Ex. 41); Sndex0126123_Restricted.xlsx (NAB Ex. 42); Federal Register, Vol. 74, No. 40, March 3, 2009; Federal Register, Vol. 74, No. 154, August 12, 2009; Federal Register, Vol. 72, No. 83, May 1, 2007, Federal Register, Vol. 74, No. 136, July 17, 2009

Notes: 1) For 2007-2009, broadcasting includes BRD-I; commercial webcasting includes CW-CRB and CW-II; subscription pureplay includes PPWC-II (SUB); non-subscription pureplay includes PPWC-II (NON-SUB) PPWC-II (SUB & NONSUB) license subtypes.

2) For 2010-2013, broadcasting includes BRD; commercial webcasting includes CW-CRB and CW-WSA; subscription pureplay includes PPWC (Sub); non-subscription pureplay includes PPWC (Non-Sub) license subtypes.

³⁶

Subscription pureplay webcasting has also grown rapidly from a very low base in 2007. Nevertheless, subscription pureplay webcasting contributes far less in royalty payments to SoundExchange than non-subscription pureplay webcasting. This growth is attributable to [REDACTED].

[REDACTED]. Blackburn, ¶ 98.

34. When we examine a measure of webcaster output growth that is economically meaningful, the analysis shows that the vast majority of the increase in webcasting occurred in a segment of webcasting with rates substantially below the statutory rates applicable to broadcasters and commercial webcasters. This result is contrary to Dr. Blackburn's conclusion that high license fees are not choking off webcasting growth.

C. Dr. Blackburn Overstates the Investment in Statutory Webcasting

35. Dr. Blackburn also tries to demonstrate the health of the webcasting industry by discussing the amount of investment in webcasting, but the investment amount he cites is misleading. Based on a trade press article, Dr. Blackburn notes: "[l]ast year, investors placed \$2.4 billion in the music industry with about \$839 million going into 'Internet Radio' or 'On-demand streaming audio and video' companies, including stock offerings by Pandora and venture capital rounds from other streaming services."³⁷
36. Of course, the only relevant investment for assessing investor interest in statutory webcasting is the amount invested in statutory webcasters, and according to the article that Dr. Blackburn cites, only \$432 million of the \$839 million he quotes was invested in "Internet Radio," with the rest going to on-demand audio and video companies. Of the \$432 million, almost all of it – \$393 million – reflected a secondary stock offering in a single company, Pandora. Of course, Pandora pays a royalty rate that is substantially below the current commercial statutory rate.
37. The remaining \$39 million consisted of "smaller venture capital rounds by TuneIn (\$25 million), DeliRadio (\$9.4 million) and Songza (\$4.7 million)". The article notes that TuneIn is an aggregator of Internet radio streams and does not pay any royalties itself.³⁸ Therefore, the investment in TuneIn does not indicate much about investor's views regarding royalty rates because it does not pay them. In addition, DeliRadio's website includes a section entitled "Streaming music royalties" that states: "Artists with streaming-enabled music on DeliRadio have given us royalty-free licenses to stream that music, in exchange for the suite of promotional tools we offer to artists for free".³⁹ Again, investment in a company that does not pay statutory royalties is uninformative regarding investors' views regarding the impact of statutory royalty rates on a business' financial performance. Thus, virtually all of the investment amount cited by Dr. Blackburn was in companies that do not pay the statutory rates.
38. It is also relevant to assess whether the investments have paid off. Pandora completed its secondary public offering in September 2013. With Pandora's secondary offering more than a year behind us, we can investigate how well the investors in that offering have done. Through its secondary public offering, Pandora sold 15,730,000 shares at a price

³⁷ Blackburn, ¶ 21.

³⁸ Glenn Peoples, "Investors Put \$2.4 Billion into Music in 2013, Streaming Tops List," *Billboardbiz*, January 31, 2014, available at <http://www.billboard.com/biz/articles/news/5893800/investors-put-24-billion-into-music-in-2013-streaming-tops-list> (accessed February 15, 2015).

³⁹ <http://deliradio101.com/for-artistsbands/streaming-music-royalties> (accessed February 22, 2015).

of \$25 per share. As a result of the offering, Pandora raised net proceeds of \$387.7 million.⁴⁰ Following the secondary offering, Pandora's share price increased up to a peak of \$39.43 on March 5, 2014 (and was at \$36.07 when the article Dr. Blackburn cites was written) and has since decreased to approximately \$15 per share in February 2015.⁴¹ The investors who participated in the secondary offering and have held their Pandora stock have seen their investment decrease by nearly \$10 per share (a 40% decline) since they made their investment. Thus, the largest of the relevant investments that Dr. Blackburn touts has not performed well.

III. Dr. Blackburn's Analyses of Promotion and Purported Cannibalization Are Flawed

39. Dr. Blackburn's analyses of promotion and purported cannibalization are flawed. An important factor in determining rates is the cost to the copyright holder of allowing a digital performance. This cost is driven, in part, by the degree to which a digital performance cannibalizes other revenue streams and by the size of the promotional benefit the performance provides to the copyright holder. Dr. Blackburn ignores the substantial evidence found in the documents, testimony, and record labels' behavior indicating that digital performances by statutory webcasters promote music sales. Dr. Blackburn attempts to use evidence of a negative correlation between streaming and music sales to bolster his claims, but his own testimony concerning economic standards confirms that correlations of the kind he offers are economically meaningless. In addition, Dr. Blackburn's analysis of statutory streaming's purported cannibalization of license fees from subscription services does not account for alternative "free" sources of music – both AM/FM terrestrial radio and pirated sources. These alternatives mean that a customer leaving a webcaster need not choose to subscribe to an interactive music service with a fee. By ignoring these options, Dr. Blackburn's analysis incorrectly suggests that a consumer's choice is between webcasting and an interactive subscription service. Dr. Blackburn also fails to account for consumers' low willingness to pay. A consumer that uses a free service has indicated by his behavior that he is likely to have a low willingness to pay for music. A consumer with a low willingness to pay is unlikely to choose a costly alternative in the event custom webcasting is degraded or eliminated when a host of alternative free sources of music are available.

A. The Opportunity Cost of Licensing a Stream of a Sound Recording Is a Key Factor in Assessing Competitive License Rates

40. I agree with Dr. Katz's view that license rates for the digital performance of sound recordings should reflect the outcome that would "happen in an effectively competitive market in the absence of the statutory licensing regime."⁴² The hallmark of an effectively competitive marketplace is that competition will tend to drive license fees toward marginal cost. A potentially important component of the cost to the copyright owner (record company) of allowing a webcaster to transmit a recording is the degree to which

⁴⁰ Pandora 2014 Annual Report, at 42.

⁴¹ Yahoo! Finance, Pandora Stock Price Chart.

⁴² Written Direct Testimony of Michael L. Katz, October 7, 2014, p 3.

the transmission, or “play,” will tend to increase or decrease the copyright owner’s revenue from other sources of distribution. For example, in a world with only streaming and digital downloads, the reduction in profit from reduced digital sales of a recording resulting from allowing it to be streamed would be included in the competitive license fee for streaming the recording. If, however, streaming the recording promotes sales, the cost to the record company of allowing the song to be streamed is negative, and competition may force the record company to pay webcasters to stream its recording.

41. As described below, Dr. Blackburn’s testimony presents arguments suggesting that statutory webcasting cannibalizes record labels’ other revenue from subscription webcasting services and does not promote music sales. The economic implication is that high license fees are appropriate. Dr. Blackburn’s discussion ignores significant relevant evidence that demonstrates the opposite of his claims.

B. There is Substantial Evidence That Statutory Webcasting Promotes Music Sales

42. Dr. Blackburn claims there is “little evidence that statutory webcasting promotes the sales of digital or physical media.”⁴³ As described below, even this weak claim is incorrect. [REDACTED] provide substantial evidence of promotion by terrestrial radio broadcasts and simulcasts. In addition, Pandora has performed an experiment that demonstrates that its plays promote music sales, and the record labels’ documents show that Pandora promotes physical and digital music sales, confirming Pandora’s analysis. Moreover, Dr. Blackburn himself provides no economic evidence indicating otherwise. Thus, contrary to Dr. Blackburn’s assertion, there is substantial evidence that statutory webcasting is promotional.

1. There Is Substantial Evidence That Record Labels Treat Terrestrial Radio and Simulcasts as Promotional

43. Notably, Dr. Blackburn focuses on custom webcasters such as Pandora, rather than radio simulcasting, when suggesting that webcasting is not promotional. As described below, there is substantial evidence that terrestrial radio broadcasts promote music sales. Moreover, the content of terrestrial broadcasts and simulcasts is typically the same and has the same lack of customizability. Thus, there is no economic basis to assert that the promotional benefit of a broadcast differs depending on whether the consumer listens online or over the air. In either case, the content of the broadcast will generally be the same, indicating the promotional benefit of the broadcast will be the same.
44. There is no doubt that the record labels treat terrestrial radio as promotional. Rand Levin, Senior Vice President, Business and Legal Affairs for Universal Music Group, states: “[p]eople who work in promotion departments try to get their label’s artists played on terrestrial radio, in the hope that increased plays could help lead to increased record sales. In other words, almost everything these employees do ‘relates’ in some sense to the

⁴³

Blackburn, ¶ 89.

possibility that terrestrial radio plays could positively affect record sales.”⁴⁴ Paul M. Robinson, Executive Vice President and General Counsel of Warner Music Group, gives similar information on the work of promotion departments. “Generally speaking, the people in a promotion department focus on promoting releases by that label’s artists through terrestrial radio. Therefore, much of what promotional employees do in their daily work could be said to ‘relate to’ the possibility of terrestrial radio performances having a positive effect on record sales.”⁴⁵ The labels would not engage in such costly activity if it did not generate additional music sales.

45. [REDACTED] terrestrial radio is an important source of promotion for record labels and explain why terrestrial radio promotes sales. Surveys and studies of music users show that AM/FM radio has a high rate of use by music listeners in all age groups. In addition, [REDACTED] AM/FM radio is an important method for listeners to learn about new music. About two-thirds of listeners report that the main or an important reason to listen to AM/FM radio is to discover new music.⁴⁷ Another study finds that [REDACTED]
46. When a record label releases an album, it develops a marketing plan for that album. Marketing plans frequently include a plan to market the album or sound recording using terrestrial radio. The labels’ promotion departments will often encourage stations to play the sound recording and provide a copy of the sound recording or album to stations. Promotions may also involve meeting with the artist and giveaways and contests for prizes such as concert tickets. [REDACTED] the labels seek to promote their artists through terrestrial radio.
47. The record labels have repeatedly recognized the importance of terrestrial radio to the success of their music. In fact, Charles Walk, Executive Vice President of Republic Records, a division of Universal Music Group, described the value of terrestrial radio to the record labels, stating that [REDACTED]

⁴⁴ Declaration of Rand Levin, November 20, 2014, ¶ 7 (NAB Ex. 37).

⁴⁵ Declaration of Paul M. Robinson, November 20, 2014, ¶ 13 (NAB Ex. 39).

⁴⁶ See, e.g., [REDACTED] I.

⁴⁷ [REDACTED] II.

⁴⁸ [REDACTED] II.

⁴⁹ SoundExchange, Inc.’s Responses and Objections to the First Set of Interrogatories from the Licensee Participants, response to Interrogatory 7 at 14 (NAB Ex. 43). For instances of the use of AM/FM radio for promotion of albums, see, e.g., [REDACTED] II.

]]⁵⁰ and "[[]]"
]]⁵¹ Other record label executives echo this view. Gary Overton, Chairman and CEO of Sony Music Nashville, reportedly tells his "staff several times a day" that "[i]f you are not on country radio, you don't exist."⁵² Thus, there is little doubt that the record labels view airplay on AM/FM radio to be an important contributor to the success of their artists' music.

48. The importance of airplay on AM/FM radio is underscored by the expenditures that the labels make to promote their artists' music on AM/FM radio. Financial records from some of the major record labels demonstrate they spend [[]] dollars per year promoting music on AM/FM radio. If these expenditures are scaled up to reflect the entire industry based on market shares, the implied total industry expenditure is [[]]. If record labels did not view radio play as promoting sales of sound recordings and albums, they would have no incentive to devote such substantial resources to obtaining radio play of their sound recordings.

2. There Is Substantial Evidence that Plays on Custom Webcast Services Like Pandora Also Promote Music Sales

49. Even when one considers only the custom webcasters on which Dr. Blackburn focuses, there is ample evidence that these services also promote music sales. For example, a Nielsen study finds [[]]

]] analysis that examines the [[]] A]]
]].

50. Pandora has addressed the question of whether plays on Pandora promote or cannibalize music sales by carrying out a well-designed randomized controlled trial to test the promotional value of playing songs on Pandora.⁵⁵ Statisticians have developed the

⁵⁰ Deposition of Charles Walk, February 20, 2015 (hereinafter "Walk Deposition"), at 11-12.

⁵¹ Walk Deposition, at 26 (emphasis added).

⁵² Nate. Rau, "Sony Nashville CEO talks importance of country radio," *The Tennessean*, February 21, 2015, available at <http://www.tennessean.com/story/money/industries/music/2015/02/20/sony-nashville-ceo-talks-importance-country-radio/23768711/> (accessed February 22, 2015).

⁵³ Nielsen, Music 360 US, October 2013, NAB00006637-6745, at 44.

⁵⁴ [[]]
]].

⁵⁵ Written Direct Testimony of Stephan McBride, October 14, 2014 (hereinafter "McBride Testimony").

randomized controlled trial as a method for estimating exactly this kind of causal effect. Randomized controlled trials are recognized as the appropriate way to test the efficacy of drugs and medical devices.⁵⁶ Furthermore, randomized controlled trials are recognized in economics for estimating causal effects.⁵⁷ In a medical randomized controlled trial, patients are randomly assigned to either the treatment group or the control group.⁵⁸ The result of the randomization is that the only systematic difference between the two groups is whether or not the patients received the treatment, so any observed difference in outcome between the treatment and the control group can be attributed to the causal effect of the treatment. By computing the difference in average outcomes between the two groups, the statistician can estimate the average causal effect of the treatment.⁵⁹

51. In Pandora's randomized controlled trial, metropolitan areas were randomly assigned to either one group for which a tested track would be played (the treatment group) or to another group for which the track would not be played (the control group).⁶⁰ Pandora tested whether sales of the new releases and catalog tracks were higher or lower in the metropolitan areas where they were played relative to the areas where they were not played. This experimental framework was repeated for a number of different randomly selected tracks, across a number of different time periods. Moreover, the geographic randomization varied for each selected track. Pandora carefully designed the experiment so that there would be sufficient information from the experiment to reliably and accurately estimate the promotional or diversionary impact from playing songs on Pandora.
52. The results of Pandora's experiment show that sales of the songs used in the experiment were higher, on average, in the areas where the songs were streamed relative to the areas where they were not streamed.⁶¹ These results were statistically significant, meaning that the promotional impacts were unlikely to be due to random chance. This experiment

⁵⁶ Joshua D. Angrist and Jorn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricists Companion*, March 2008.

⁵⁷ James H. Stock and Mark W. Watson, *Introduction to Econometrics*, (Boston: Addison Wesley, 2003), Chapter 11.

⁵⁸ In many economic experiments, it is not possible for the experiment to be "blind," meaning the subjects do not know whether they are assigned to the control or treatment group. In this case, listeners to Pandora did not know whether they were in a treatment or a control group. Thus, the Pandora study has the additional feature of being a blind study, which means the subjects' knowledge of the study cannot influence the results.

⁵⁹ This approach is in fact consistent with Dr. Blackburn's own observation that "one should conclude, as an economic matter, that statutory webcasting leads to additional sales of recorded music only if there are sales made ... that would not have otherwise been made, absent the streaming. That is, if the play(s) did not happen, there would have been fewer sales." Blackburn ¶ 91.

⁶⁰ The randomization was based on geographic regions because the outcome of interest, music sales, is available for geographic regions. Pandora used SoundScan which tracks unit sales (both digital and physical) for most music sold in the US to measure sales. I understand SoundScan is also widely used by the music industry to track sales.

⁶¹ McBride Testimony, Table 3.

provides strong evidence that plays of songs on Pandora promote the sales of digital and physical recordings. Moreover, Pandora's results are consistent with surveys and [REDACTED].

3. Dr. Blackburn's Analysis of Promotion Is Incorrect and Contradicts His Testimony Regarding the Irrelevance of Correlation between Streaming and Sales

53. Dr. Blackburn has provided no economic evidence that counters the substantial evidence of promotion discussed above. While Dr. Blackburn recognizes that mere correlation between streaming and music sales cannot show a meaningful economic relationship,⁶² the evidence that Dr. Blackburn presents on the question of promotion amounts to nothing more than the suggestion of a negative correlation between streaming and music sales. The economic standard he espouses indicates that the evidence he offers is meaningless.
54. Dr. Blackburn dismisses evidence of positive correlation between streaming and music sales with the standard argument that correlation is not evidence of causation. Thus, according to Dr. Blackburn, evidence of music downloads made through links on webcasters sites are not evidence of promotion, only of a correlation between a play and increased overall sales.⁶³ Under Dr. Blackburn's view that correlation does not imply causation, the positive correlation between streaming and digital music sales between 2005 and 2013, as shown by the backup to Dr. Blackburn's Figure 8, is also presumably not evidence that streaming promotes sales.⁶⁴
55. Despite rejecting mere correlation as evidence of promotional impact, however, Dr. Blackburn relies on just such evidence when attempting to argue that streaming is *not* promotional. For example, Dr. Blackburn presents evidence that increased streaming by Pandora is associated with a decline in digital music sales between 2012 and 2013⁶⁵ and evidence of a negative correlation between streaming and digital music sales in the first half of 2013 and the first half of 2014.⁶⁶ Dr. Blackburn's "evidence," however, amounts to nothing more than examples of correlation that are, by his own standard, not evidence of causation.
56. Not only does this evidence fail to demonstrate that increased streaming *caused* reduced music sales, it is evident that Dr. Blackburn had to sift through the data on streaming and music sales to find narrow time windows that would actually show a negative correlation rather than a positive one. Dr. Blackburn's data show that over the longer term, the relationship between streaming and digital music sales has been positive, not negative.

⁶² Blackburn, ¶ 91 and footnote 107.

⁶³ Blackburn, ¶ 91.

⁶⁴ Blackburn, ¶ 91 and footnote 107.

⁶⁵ Blackburn, ¶ 90.

⁶⁶ Blackburn, ¶ 92.

The negative correlation that Dr. Blackburn attempts to use as evidence that streaming cannibalizes music sales is cherry picked from a larger amount of data that shows the opposite relationship. Dr. Blackburn's purported evidence that streaming cannibalizes digital music sales is meaningless.

57. Dr. Blackburn also quotes a Billboardbiz article to support his assertions regarding promotion.⁶⁷ Dr. Blackburn claims the article "explains that iTunes Radio was disappointing in terms of digital download sales"⁶⁸ and failed to "prevent a decline in sales."⁶⁹ Statements about disappointing music sales associated with iTunes Radio and the fact that iTunes Radio failed to prevent a decline in music sales are not evidence of a lack of promotion from iTunes Radio specifically or from statutory webcasting more generally. According to Dr. Blackburn, the relevant question is whether exposure to songs through iTunes Radio led to music sales "through referral links or otherwise" that would not have occurred "absent the streaming."⁷⁰ Dr. Blackburn's discussion of the introduction of iTunes Radio fails to address what the level of music sales would have been absent the additional plays associated with the introduction of iTunes Radio. Dr. Blackburn's anecdote regarding iTunes Radio is economically meaningless.
58. Dr. Blackburn's cherry-picked examples of negative correlation between streaming and music sales cannot support the conclusion that statutory streaming is not promotional. They certainly cannot overcome the evidence described above showing that streaming, including simulcasting, is promotional.

C. Dr. Blackburn's Analysis of Purported Cannibalization of License Fees from Subscription Services Fails to Account for Alternative "Free" Sources of Music and Consumers' Low Willingness to Pay for Music Services

59. In addition to Dr. Blackburn's claim that webcasters cannibalize sales, Dr. Blackburn asserts, without empirical analysis, that statutory webcasters compete directly with subscription streaming services and cannibalize more lucrative record label revenues from those subscription services as a result.⁷¹ Dr. Blackburn concludes that "if Pandora were not available, or if it were less attractive to the user (perhaps because it had more advertising spots per hour, for example) it would stand to reason that users who would otherwise use Pandora would be more likely to use Spotify or purchase digital audio tracks as an alternative."⁷²
60. Of course, the question is not whether some Pandora listeners would be more likely to use subscription on-demand services if Pandora were not available or were degraded.

⁶⁷ Blackburn, ¶ 93.

⁶⁸ Blackburn, ¶ 93.

⁶⁹ Blackburn, ¶ 89.

⁷⁰ Blackburn, ¶ 91.

⁷¹ See, e.g., Blackburn, ¶ 97.

⁷² Blackburn, ¶ 99.

The question is *how many* users might switch to subscription on-demand services. Dr. Blackburn's analysis stops well short of providing any indication of how many users might subscribe to a service with a fee should Pandora be degraded. If only a relatively small share of Pandora users would shift to a subscription service should Pandora be degraded with the remainder going to other free and non-royalty-paying services (e.g., terrestrial radio or pirate sites that offer on-demand characteristics), the direct conclusion is that the opportunity cost to the labels of a "play" on Pandora is quite low or even negative when promotional effects are considered.

61. Notably, Dr. Blackburn does not suggest that terrestrial radio or simulcasts of terrestrial radio cannibalize subscription streaming service revenue. In fact, he and others recognize that digital simulcasts are not close substitutes for subscription on-demand services.⁷³ Thus, there is little likelihood that digital simulcasts cannibalize revenue from subscription services.

1. Dr. Blackburn's Analysis of Substitution between Statutory Streaming Services and Subscription On-Demand Services Is Particularly Inapplicable to Simulcasts of Terrestrial Radio

62. Dr. Blackburn does not claim that simulcasts of terrestrial radio broadcasts are good substitutes for subscription streaming services, particularly for subscription on-demand services. In fact, Dr. Blackburn's analysis indicates that the features of terrestrial radio simulcasts are sufficiently different from the features of subscription services that simulcasts provide "the incentives for listeners to 'upgrade' to the additional offerings provided by subscription services."⁷⁴ This conclusion implies that simulcasts are not good substitutes for subscription services. Moreover, the closest substitute for a digital simulcast of a radio broadcast is the over-the-air broadcast, which will generally contain the same content, indicating simulcasts are most likely to draw listeners from terrestrial radio broadcasts. Dr. Blackburn does not appear to claim that digital simulcasts draw consumers from subscription services, and his assertion regarding the "cannibalization" of subscription revenues by statutory webcasters is inapplicable to simulcasts of terrestrial radio broadcasts.
63. Other SoundExchange witnesses have reached the same conclusion as Dr. Blackburn regarding the differentiation between digital simulcast of terrestrial radio and subscription webcasting services. For example, Dr. Rubinfeld recognizes that [REDACTED]

[REDACTED]⁷⁵ Dr. Rubinfeld recognizes that [REDACTED]

[REDACTED] Thus, Dr. Rubinfeld has [REDACTED]

⁷³ Blackburn, ¶ 101. See also [REDACTED].

⁷⁴ Blackburn, ¶ 101.

⁷⁵ Rubinfeld Deposition, at 121.

⁷⁶ Rubinfeld Deposition, at 121.

]] In fact, Dr. Rubinfeld admitted that he]]

]]

64.

]]. Simulcasts generally have the same content as terrestrial broadcasts, and according to Mr. Harrison,]]

]] Thus, the lack of customizability differentiates terrestrial radio simulcasts from other forms of customizable streaming.

65. There are many types of "free" streaming services with on-demand features that are closer substitutes for subscription on-demand webcasting services than digital simulcasts of terrestrial radio. These alternatives with on-demand functionality and no-cost-to-the-user are more likely to cannibalize revenue from subscription on-demand webcasting services than less interactive services.⁷⁹ As Dr. Blackburn admits, digital simulcasts are not good substitutes for on-demand services and are unlikely to cannibalize them.

2. Dr. Blackburn's Analysis of the Substitution of Custom Webcasting for Subscription Services Fails to Account for Consumers' Options That Are Closer Substitutes for Subscription On-Demand Services than Custom Webcasting

66. Even with respect to custom webcasters, Dr. Blackburn's claim that they cannibalize revenues earned from subscription on-demand services is unfounded. Consumers have many options for obtaining access to music. Dr. Blackburn's discussion of competition between statutory services and interactive subscription services does not account for these options. As a result, he fails to account for the possibility that if custom webcasting were to be degraded or discontinued, consumers might choose options other than a subscription service (or non-statutory on-demand services more generally) as an alternative.
67. To assess where users of custom webcasting would obtain music if custom webcasting were to be degraded it is useful to examine the services they used before adopting custom

⁷⁷ Rubinfeld Deposition, at 131.

⁷⁸ Harrison Deposition, at 191.

⁷⁹ See, e.g.,]]

)).

webcasting. One alternative to custom webcasting is terrestrial radio. Terrestrial radio is a significant source of music for most demographic groups.⁸⁰ Pandora directly targets terrestrial radio listeners to become Pandora users.⁸¹ In fact, Simon Fleming-Wood, Pandora's Chief Marketing Officer, notes "our [Pandora's] closest competitor, and greatest opportunity for converting new listeners, is the broadcast radio industry - including traditional terrestrial (AM/FM) radio, and satellite radio."⁸² Pandora's targeting of radio listeners indicates that terrestrial radio is a closer substitute for Pandora than subscription on-demand services and that users of free-to-the-user custom radio would more likely switch to terrestrial radio than to a subscription on-demand service if custom radio were degraded.⁸³

68. Another way to assess whether Pandora is likely to draw subscribers from subscription on-demand services is to evaluate the substitutes for subscription on-demand services. If there are many closer substitutes for subscription on-demand services than Pandora, it is unlikely that Pandora or custom webcasting draws significant users from subscription services relative to the closer substitutes. Consumers seeking to avoid paying a subscription fee would choose one of the closer substitutes for a subscription service rather than choose Pandora. Record labels have supported this view as well. In the course of seeking approval for their merger, UMG and EMI also asserted that [REDACTED] but of course, they are free to the user and do not generate royalties. To the extent these services

80

[REDACTED].

81

See, also, Blackburn, ¶ 37. ("VentureBeat: Will Pandora ever completely unseat terrestrial radio in the car? Will it ever offer a full slate of music, live and local news, weather, traffic, etc.? Westergren: I think we'll get there, but I don't think we're quite there yet. With consumers today the expectation that you have a lot more control [sic]. I think there will always be a place for terrestrial radio. But we think we can get a good share of the time people spend listening in the car. Half of all listening now takes place in the car."). See also Blackburn, ¶ 37. ("Technology has changed the delivery for in-car entertainment once dominated by AM/FM radio," citing SNL Kagan, "The Economics of Internet Music and Radio."). See [REDACTED].

82

Written Direct Testimony of Simon Fleming-Wood, ¶ 15.

83

I understand that Pandora is submitting testimony that describes consumers' likely responses to the elimination of the free version of Pandora or the elimination of all free custom webcasting. Written Rebuttal Testimony of Larry Rosin.

84

[[Letter from [REDACTED]].

85

[[Letter from [REDACTED]].

include on-demand features and other characteristics of on-demand streaming, they should be considered closer substitutes to subscription on-demand services than custom webcasting.

69. For example, in a white paper supporting the merger, [REDACTED] [REDACTED] Thus, [REDACTED] representations to the FTC indicate that the problem is not the "convergence" of custom webcasting to subscription on-demand services, but the "convergence" of illegitimate sources of music that are limiting subscriptions to on-demand streaming services.

70. [REDACTED] also argued to the FTC that [REDACTED] In fact, [REDACTED] Thus, in the labels' efforts to compete with piracy, they have allowed the creation of a legitimate free-to-the-user interactive service that is a closer substitute to subscription on-demand services such as Spotify than custom webcasting. A service such as ad-supported Spotify is much more likely to draw consumers from subscription on-demand services than custom webcasting because it provides many of the benefits of subscription Spotify at no cost to the user.

71. Aside from having different sets of features, the major difference between a subscription service and custom webcasting and most other statutory services is the subscription fee itself. To the extent that users of most statutory services have a low willingness to pay for music, they may be effectively unwilling to pay out-of-pocket for any music service. There is substantial evidence that many consumers, in fact, do have a low willingness to pay for music services. For example, WMG has noted that [REDACTED] When asserting that "free services are not promotional of subscription services", Dr. Blackburn notes that "most subscription users of music streaming services are 'music aficionados' or 'super fans' that have a higher willingness to pay for advertisement-free music services."⁹⁰

86 [REDACTED] [REDACTED]

87 [REDACTED] [REDACTED]

88 [REDACTED] [REDACTED]

89 [REDACTED] [REDACTED]

90 Blackburn, ¶ 95.

72. Of course, Dr. Blackburn's description of music users who subscribe to music services implies that many consumers who are casual music listeners are not willing to pay subscription fees. Moreover, the primary competition to subscription services appears to be pirated sources of music or ad-supported on-demand services. Certainly if statutory sources of music exited the market or were substantially degraded these services would be the remaining and virtually limitless source of free music to those unwilling to pay a fee. In fact, UMG and EMI argued [REDACTED]

73. The low or even zero willingness to pay for a music-streaming service of many consumers is not controversial. Dr. McFadden has measured the willingness to pay for certain characteristics of streaming services using an approach that allows him to estimate the willingness to pay of each respondent to his survey.⁹² He finds "that consumers of streaming services divide between those who are willing to pay for these services and the extra features they offer and those who are averse to paying for music streaming services and place relatively low values on these extra features."⁹³ Clearly, consumers such as these are unlikely to view a subscription service and a free-to-the-user custom webcasting service as substitutes. Dr. McFadden's results indicate that consumers' preferences make many of them unlikely to switch between subscription and free-to-the-user services.

IV. Dr. Blackburn's Discussion of Webcasters Delaying Profits to Invest in Market Share Does Not Provide an Economic Justification for a Rate Increase

74. Dr. Blackburn implies that because Internet firms sometimes "intentionally" delay profitability as they build up user bases, the Judges need not take the current lack of profitability in the industry as a sign that the health of the industry is imperiled – or that royalty rates have been the reason for such shortfall. To the contrary, Dr. Blackburn goes so far as to suggest that Pandora's royalty rates have provided it a competitive advantage over its rivals and *allowed* it to focus on growth.⁹⁴ He also suggests that Pandora in particular could solve its financial problems "by simply selling more ads."⁹⁵ To the extent Dr. Blackburn intends these arguments as support for increasing royalty rates – whether because Pandora will be profitable down the road, or because Pandora could cover higher license rates by selling more advertising without damage to its long-term prospects – he is mistaken.
75. The fundamental principle economists use to explain firm behavior is that firms seek to maximize their profits. In practice, firms exist indefinitely so this means that they

⁹¹ [REDACTED]

⁹² McFadden, ¶ 52.

⁹³ McFadden, ¶ 10. See also McFadden, ¶ 56. ("The posterior distribution of the values respondents place on a free plan shows a group of consumers who place a high value on no out-of-pocket expenses.")

⁹⁴ Blackburn, ¶ 78.

⁹⁵ Blackburn, ¶ 88.

maximize the discounted stream of their profits over time, or the net present value of profits, which accounts for the fact that a dollar today is worth more than a dollar in the future. Thus, future profits always are (and rationally should be) a concern for the firm. When actions today affect profitability in the future, firms may not maximize profits in the current period because doing so is too costly in terms of future profits.⁹⁶ Recognizing that taking “profits” early – whether by seeking to drive up short-term revenue, or by investing inadequately in the business – may be costly in terms of future profits is the key to understanding why rational firms do not focus on maximizing profits in a particular quarter or year. The lower future profits resulting from acting to increase profits today (e.g., by increasing prices or ad loads above optimal levels, or by taking other actions that drive away users) are real costs that offset today’s higher profits. In competitive circumstances, firms that do not act optimally may increase current profitability, but will consequently decrease future profits by a greater amount and, therefore, will be less likely to survive than firms that act optimally.

76. Dr. Blackburn appears to agree with these principles, but he incorrectly applies them to Pandora. Dr. Blackburn notes, rightly, that under certain conditions, it is valuable for firms in an industry to invest in establishing a user base because the users are likely to stick with the firm. Of course, where users are less likely to leave a firm once they establish a business relationship with it, the initial competition for users will be quite fierce – and costly – because once a user is lost to a competitor, that user is most likely lost forever. As Mike Herring’s testimony explains, tremendous up-front investment in systems and sales force (among other items) is also required, in addition to user scale, to attract advertisers and “monetize” the growing user base. As Mr. Herring’s testimony also makes clear, Pandora’s ability to make such investments has been constrained by its royalty costs, which dominate Pandora’s cost structure. Pandora’s financial performance is properly understood as a result of the need to compete for users and invest in the future of the business – that is, its financial performance is the result of its maximizing its profits, not the result of its deferring profits. Firms that do not engage in this competition for users and advertising dollars would be failing to act optimally given the benefits (or necessity) of obtaining users and monetizing their listening hours.⁹⁷
77. That Pandora’s current financial performance reflects a decision to invest in future growth and that Pandora anticipates future profitability do not provide any economic justification for raising license rates or for concluding that doing so can be done without cost or consequence. To the contrary, the discussion above makes clear that Pandora’s future growth and profitability – in addition to being uncertain – is dependent on the ability to continue making necessary investments in the future. A dramatic increase in current costs – including a near doubling of royalty rates – necessarily will interfere with Pandora’s ability to continue to invest in its business, negatively affecting future growth and profitability. The same is true of the suggestion that Pandora could simply “sell more ads” if it wanted – and thus cover any royalty increase. While I will defer to Mr. Herring

⁹⁶ See, e.g., Thomas E. Copeland and J. Fred Weston, *Financial Theory and Corporate Policy*, 3rd Ed. (Reading: Addison-Wesley Publishing Company, 1988), at 22-23.

⁹⁷ See Written Rebuttal Testimony of Michael Herring.

as to whether it would even be possible for Pandora to do so, Dr. Blackburn appears to overlook (or ignore) the fact that increased ad loads, even if they might boost revenue in the short term, might very well drive away listeners, compromise future earnings, and thus decrease Pandora's financial performance. Rate increases should not be premised on the conclusion that Pandora could afford them (at least in the short term) by pursuing what Dr. Blackburn agrees (assuming Pandora is currently operating rationally) would be a suboptimal strategy.⁹⁸

78. Dr. Blackburn's study of the profitability of Internet firms does not alter these conclusions. Instead, it shows that these firms had more users and higher revenues and that some were more profitable two years after their initial public offerings than they were two years before.⁹⁹ It is not surprising that firms that survive two years beyond their public offerings have more customers and revenue and sometimes higher profits than they had before going public. Nothing about this pattern of growth in users, revenues, and profitability indicates that the firms included in his study did not act rationally or that they did not maximize their profitability – properly defined – at all times. Moreover, many of the firms' in Dr. Blackburn's study failed to achieve profitability or even had greater losses (operating income) following their IPOs than before.¹⁰⁰ Thus, Dr. Blackburn's study shows that "profitability" is uncertain even after years of attempting to build a base of users.

79. Dr. Blackburn's analysis highlights the fact that even those Internet firms that succeed to the point of having an IPO can remain unprofitable or grow even more unprofitable. Thus, the "expected" profits that Internet firms invest to achieve profitability must be considered uncertain until they are actually realized. Most critically, Dr. Blackburn's analysis of profitability provides no basis to assume that Internet firms generally, or Pandora in particular, would be able to raise prices or increase ad inventory to cover additional costs in the short term – and certainly not to do so without harm to their businesses and prospects for long-term success.

V. Dr. McFadden's Analysis Demonstrates that Many Consumers Have a Low Willingness to Pay for Streaming and ~~Does~~ Does Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"

A. Dr. McFadden's Results Show That a Significant Share of Consumers Have Low Willingness to Pay for Streaming

80. Dr. McFadden estimates the average willingness to pay for a number of features of streaming services based on results from a survey he designed. At my direction, Dr.

⁹⁸ UMG and EMI recognized that if a music service is behaving optimally, there is no way for it to better monetize its content. "If it is possible to improve the way in which music is monetized without degrading the quality and attractiveness of a platform, a digital retailer would have done so already." COMP/M.6458 – Universal Music Group / EMI Music, Supplementary Submission, at 18-19 (SNDEX0268469-70).

⁹⁹ Blackburn at ¶¶ 68-69.

¹⁰⁰ Blackburn, Table 8.

McFadden's model was rerun using the results of his survey and the computer code provided. The results closely match Dr. McFadden's.¹⁰¹

81. Willingness to pay in the context of Dr. McFadden's model means something quite specific. In Dr. McFadden's model, the features are measured relative to a streaming service with a baseline level of features.¹⁰² His survey asked respondents to make choices over different services with different prices and different combinations of features to elicit the amounts they are willing to pay for different features. Figure 6 shows the features and levels of those of features that Dr. McFadden included in his analysis.

Figure 6
Features Included in Dr. McFadden's Analysis

Attribute	Feature Level
Playlist generation method	<ul style="list-style-type: none"> • Curated by music tastemakers* • Generated by a computer algorithm customized by your preferences • Curated by music tastemakers and generated by a computer algorithm customized by your preferences
Features available for streaming to a computer	<ul style="list-style-type: none"> • Playlists generated by the service* • Playlists generated by the service and Album, artist and song selection on demand
Ability to listen offline	<ul style="list-style-type: none"> • Not available* • Available
Features available for streaming to mobile devices	<ul style="list-style-type: none"> • Not available* • Playlists generated by the service • Playlists generated by the service and Albums and artists chosen by you, but tracks are played in a random order • Playlists generated by the service and Album, artist and song selection on demand
Ability to skip songs	<ul style="list-style-type: none"> • Up to 6 skips per hour* • Unlimited ability to skip tracks
Music library size	<ul style="list-style-type: none"> • 1 million songs* • 10 million songs • 20 million songs • More than 20 million songs
Advertising	<ul style="list-style-type: none"> • 1.5 to 3 minutes of ads per hour* • No ads

¹⁰¹ A comparison of the recreated results and Dr. McFadden's results are contained in Appendix C. The results are a close match to Dr. McFadden's. Dr. McFadden's code implementing his estimation did not set a fixed "seed" for the estimation, which entails generating random numbers. Without a fixed seed, the estimation will yield slightly different results each time the code is run.

¹⁰² McFadden, ¶ 57.

Source: McFadden, Table 1 and ¶ 57.

Note: A * indicates the features included in McFadden's baseline specification.

82. Dr. McFadden presents only the estimated *average* willingness to pay for each feature addressed in his survey. However, it is possible to estimate each survey participant's willingness to pay for the features addressed in the survey.¹⁰³ Based on the information for individual respondents, Dr. McFadden notes that there is a group of users who are averse to paying for music streaming services.¹⁰⁴ Of course, all consumers are averse to paying for things, always preferring to pay less rather than more for a good or service. In fact, Dr. McFadden's results show more than that some consumers are averse to paying for streaming services. The results of his analysis show that a substantial number of consumers place a *negative value* on many of the features streaming services offer and place a negative value on the bundle of features included in high-end subscription streaming services. Thus, Dr. McFadden's results are consistent with [REDACTED] [REDACTED] indicate many consumers have a low willingness to pay for subscription streaming services. However, Dr. McFadden's results also indicate that a significant group of consumers dislikes and will avoid many features that are normally thought to be desirable. Thus, adding features to a service can actually drive consumers away from it according to Dr. McFadden's results.
83. Figure 7 illustrates this for a particular feature. The figure shows the distribution of the willingness to pay for a streaming service with more than 20 million songs relative to an otherwise identical service with one million songs, weighted for the population of future users.¹⁰⁵ The height of each vertical line shows the share¹⁰⁶ of respondents with a willingness to pay for the feature within a given range of valuations of the feature (shown on the horizontal axis).

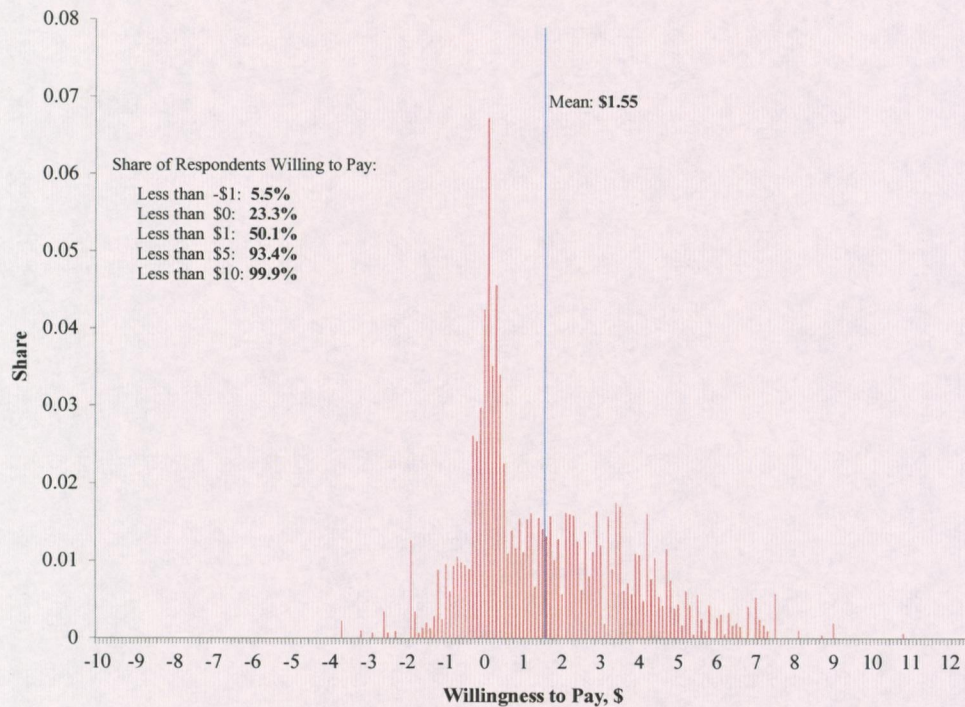
¹⁰³ McFadden, ¶ 52.

¹⁰⁴ McFadden, ¶ 10.

¹⁰⁵ Dr. McFadden weights his results for different populations. His preferred population is what he calls "future users." McFadden at ¶ 54. The results presented here are weighted for Dr. McFadden's preferred group.

¹⁰⁶ For example, "0.05" indicates 5% of respondents.

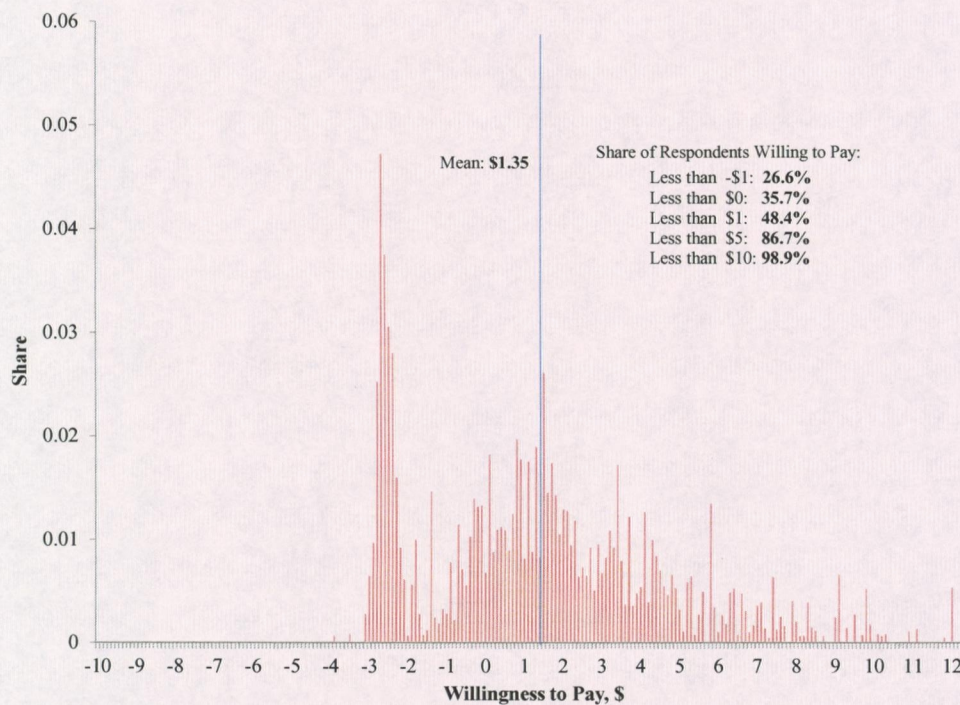
Figure 7
Distribution of Future Users' Willingness to Pay for Catalog of more than 20 Million Songs



84. As illustrated the average willingness to pay for a music library of more than 20 million songs is \$1.55 per month. However, this average does not necessarily describe either the range of values that consumers place on a larger music library or reflect the valuation that is most commonly held by consumers. The figure shows that a significant share of future users - approximately 23% - has a negative willingness to pay for the larger song library. For individuals with these tastes, Dr. McFadden's results indicate that a streaming service with one million songs is preferable to a service with more than 20 million songs, all else equal. Thus, a substantial share of users do not just have a low willingness to pay for more songs, the additional musical content has a negative value for them. Thus, a significant share of consumers will behave in a way that is inconsistent with the general intuition that more songs are always better. Moreover, the average willingness to pay provides no indication of consumers' divergent preferences regarding the size of a song library.
85. In fact, there are some consumers with a negative willingness to pay for most of the features in Dr. McFadden's model, and the share of these consumers is often significant. Figure 8 shows the distribution of willingness to pay for a service with no advertisements. On average, future users are willing to pay about \$1.35 for a service with no ads relative to one with ads. However, nearly 36% of future users prefer a service with ads relative to a service without ads, all else equal. Moreover, the distribution is bimodal, meaning it has two peaks. There is a group of consumers that places a value of between negative \$2 to negative \$3 (indicated on the horizontal axis). The negative

willingness to pay for a service with no advertisements means these consumers prefer a service with advertisements over one without. There is a second peak in the distribution of consumers' willingness to pay for a service with no advertisements between \$1 and \$2. These consumers have the more intuitive preference for a service without ads and will pay something additional for a service with no ads. In this case, the average willingness to pay for a service with no ads masks the fact that there is a bimodal distribution (*i.e.*, a distribution with two peaks) of preferences over the willingness to pay for a service with no advertisements and that the peaks occur so that consumers at the peaks have divergent preferences (*i.e.*, would respond in opposite ways) regarding a service with or without advertisements.

Figure 8
Willingness to Pay for No Advertisements

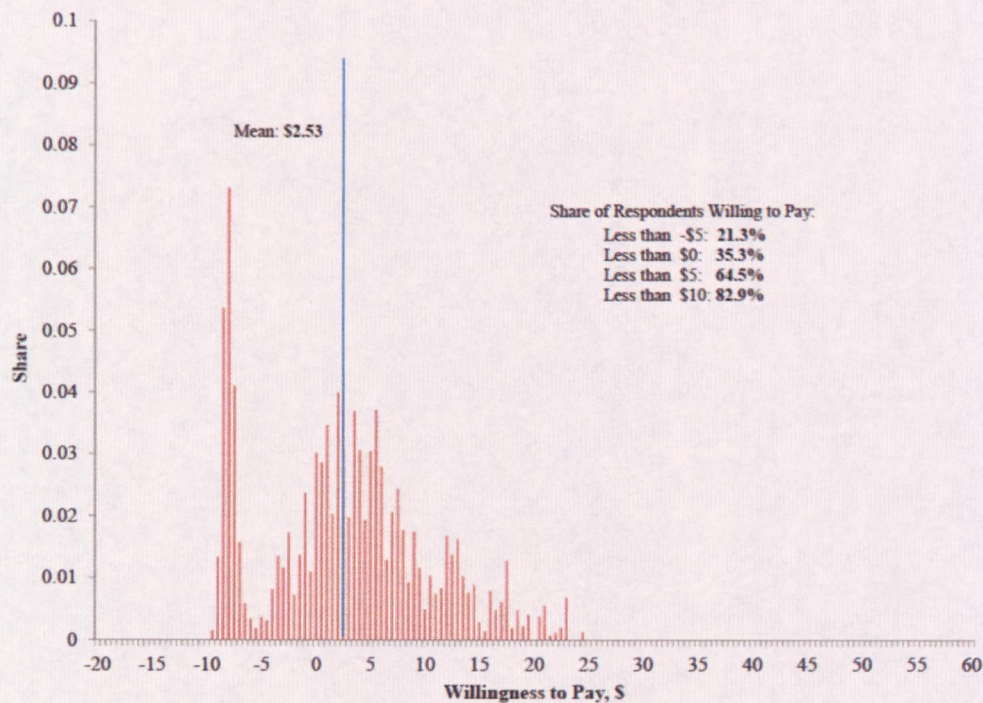


86. There is no reason that consumers cannot dislike certain features of a webcasting service. The fact that consumers are split on whether a feature adds or detracts from a service means that it is difficult to design a service that will be appealing to all consumers. For example, adding a larger library might seem to be a good way to attract users, but according to Dr. McFadden's results, a larger library is expected to lower the value of a service for 23% of users. Similarly, removing advertisements may seem to be a good way to attract users to a service, but doing so is expected to lower the value of the service for 36% of users. With a wide range of values for individual features, ranging from liking a feature a lot to disliking it a lot, the "convergence" of services with different features in the minds of a large number of consumers becomes less likely.

87. As noted, Dr. McFadden provides only estimates of the average willingness to pay for features of streaming services. Where estimates of the individual willingness to pay are both positive and negative and when the distributions of willingness to pay are bimodal (sometimes with peaks on either side of zero), the average willingness to pay does a particularly poor job of describing the range and even the direction of preferences. In the examples above, the average valuations are positive, indicating positive average valuations for features that would generally be considered to be desirable. However, the full distributions of consumer preferences show that while some consumers like a feature, another group dislikes the feature. It is always the case that the average does not fully describe a distribution. In this case, however, the averages often do not even get the direction of many consumers' preferences right and therefore do not indicate that groups of consumers will respond not just differently to changes in a service's features but in opposing directions.
88. This problem is not limited to individual features of streaming services. It extends to the willingness to pay for the bundles of features included in services. Consider consumers' willingness to pay for a service such as Spotify Premium relative to an ad-supported version of the same service. The difference between services of these types primarily entails restrictions on the level of on-demand mobile service and whether the service allows off-line listening. Since the ad-supported service is free to the user, the relative willingness to pay for the subscription service over the ad-supported service is a measure of consumers' willingness to pay out of pocket for the additional features offered by the subscription service. (Consumers will not pay for the features that they can obtain for free in the marketplace, but consumers will pay for the "extras" that they cannot get for free.)
89. Figure 9 illustrates the willingness to pay for a premium subscription service relative to a free-to-the-user ad-supported service. The figure shows that the distribution of the willingness to pay for the features of a premium on-demand service relative to an ad-supported service is bimodal. One peak occurs where consumers have a negative willingness to pay for incremental features and another peak occurs where consumers have a positive willingness to pay for incremental features, but lower than the typical price of a premium on-demand service. Once again, the average willingness to pay is positive, but does not capture the fact that some consumers prefer services without the incremental features of a premium on-demand service relative to an ad-supported service.

Figure 9

Willingness to Pay for a Premium On-Demand Subscription Service over a Free Ad-Supported Service



90. The figure also illustrates that potentially only a relatively small share of consumers may be willing to pay for a subscription on-demand service relative to an ad-supported on-demand service. In this example, about 17% of consumers value the incremental features of the premium service by more than the typical \$10 subscription price.
91. Of course, even those who value the service by more than \$10 may not buy it because they may prefer an option not included in this example, such as buying CDs, downloading digital tracks, or using a pirate service. The alternatives to using some type of streaming service were not included in Dr. McFadden's survey, so it is not possible to know from the survey how they are valued by consumers or how they would affect consumers' choices. As UMG and EMI have asserted [REDACTED]
- [REDACTED]
- [REDACTED]¹⁰⁷ In this regard, Figure 9 understates the "competition" faced by the premium streaming service. In the music marketplace, consumers would compare the streaming service to many other alternatives rather than just the one alternative in the above example. The availability of other

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See, e.g., [REDACTED].

alternatives would lower the likelihood that the premium streaming service is a consumer's first choice.

92. Moreover, this example illustrates the limitations of estimates of the average willingness to pay for describing consumer behavior. The figure shows that the average willingness to pay for the subscription service over the ad-supported service is \$2.53, well below a typical monthly subscription price for a premium on-demand service of \$10. If all consumers had the average willingness to pay for the premium subscription service, no one would buy it. However, there are some consumers with more extreme preferences that would be willing to pay the monthly subscription fee *if the only other choice in the marketplace were the ad-supported service*. Thus, the average willingness to pay for features as measured by Dr. McFadden's survey does not tell us about market outcomes. They are unrelated to market prices and do not describe the choices of any individual consumer.
93. Dr. McFadden's analysis identifies a significant share of consumers with a negative willingness to pay for many features of a streaming service. This outcome is most likely related to the fact that ~~fully 25~~²⁴% of his survey respondents uniformly chose the first option in each choice task, the free-to-the-user option. In addition, of all responses provided, about 59% indicated a preference for the free service. Thus, the survey respondents indicated through their responses that they do, in fact, have a strong aversion to paying for an upgraded streaming service with more features. Another alternative, however, is that these and possibly other respondents did not have a good understanding of the survey instrument and disproportionately chose the first choice offered. I understand that John Hauser is addressing this issue.¹⁰⁸

B. Dr. McFadden's Results Do Not Corroborate Dr. Rubinfeld's "Interactivity Adjustment"

94. Dr. Rubinfeld uses the license fees the record labels charge to non-statutory on-demand streaming services as benchmarks for the statutory rates he recommends. Dr. Rubinfeld allows that some adjustment to these rates is appropriate for statutory webcasters. To define an adjustment, he assumes that "the ratio of the average retail subscription price to the per subscriber royalty paid by the licensee to the record label is approximately the same in both interactive and non-interactive markets."¹⁰⁹ In order to adjust the non-statutory rates to a level consistent with this assumption, Dr. Rubinfeld calculates an "interactivity adjustment" equal to the ratio of the average subscription prices of on-demand and non-interactive services.¹¹⁰ Dr. Rubinfeld finds that the ratio of the average retail subscription price of on-demand services and the average subscription price of statutory services is about 2.¹¹¹ The asserted logic of the "interactivity adjustment" is that

¹⁰⁸ Rebuttal Testimony of John Hauser.

¹⁰⁹ Rubinfeld, ¶ 169.

¹¹⁰ Rubinfeld, ¶ 171

¹¹¹ Rubinfeld, ¶ 171.

subscription rates for non-statutory services are about double subscription rates for statutory services. Therefore, according to Dr. Rubinfeld, license rates for non-statutory services should be about double license rates for statutory services, all else equal. Dr. Rubinfeld uses the “interactivity adjustment” to downward adjust his benchmark interactive license fees to a level he asserts is appropriate for statutory non-interactive license fees.

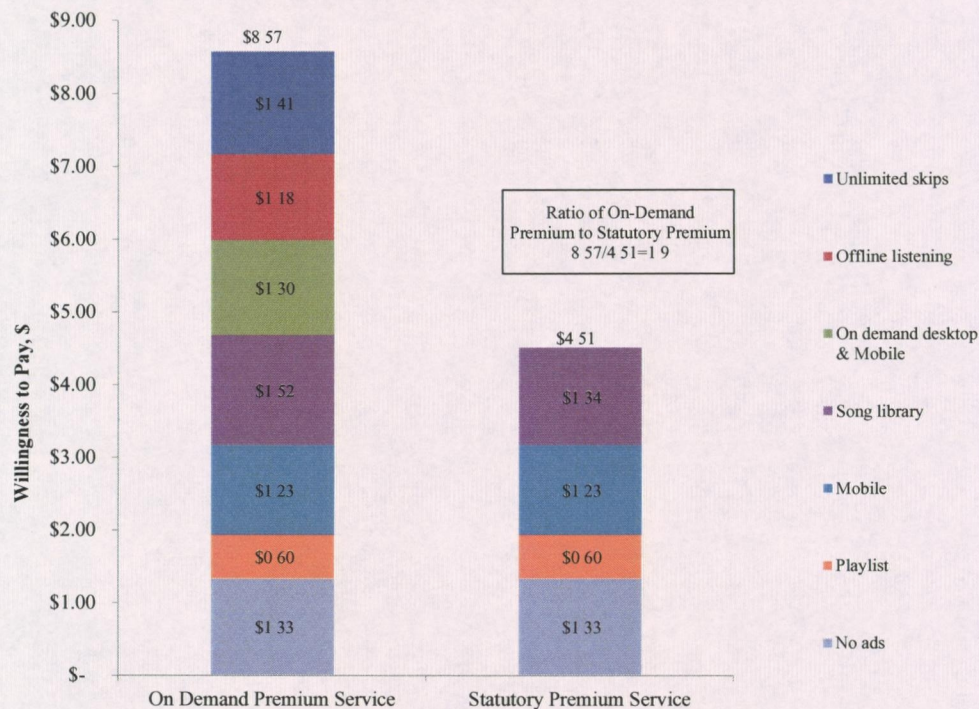
95. As support for his calculation of an “interactivity adjustment” using subscription prices, Dr. Rubinfeld asserts that Dr. McFadden’s estimates of consumers’ willingness to pay for the features of interactive and non-interactive services indicates that the “interactivity adjustment” calculated from subscription prices is “conservative.”¹¹² By this, Dr. Rubinfeld means that the ratio of the average willingness to pay for the features of an interactive service (computed from Dr. McFadden’s survey) is slightly less than double the willingness to pay for the features of a statutory service. The implication is that the downward adjustment to Dr. Rubinfeld’s benchmark license rates would be smaller if he used the alternative “interactivity adjustment” based on his calculations using Dr. McFadden’s results rather than his “interactivity adjustment” based on average subscription prices.
96. Despite the fact that Dr. Rubinfeld has used Dr. McFadden’s estimates of willingness to pay in order to calculate a result that is close to his “interactivity adjustment,” Dr. Rubinfeld’s claim that Dr. McFadden’s estimates of willingness to pay support his “interactivity adjustment” is incorrect for two reasons. First, Dr. Rubinfeld’s “interactivity adjustment” is designed to keep the ratio of subscription prices and license fees the same for statutory and non-statutory services.¹¹³ As a matter of basic arithmetic, this adjustment involves subscription prices and license fees. It is not related to Dr. McFadden’s estimates of the average willingness to pay for the features of different types of services. In fact, Dr. McFadden’s estimates of willingness to pay need not have any relationship to market prices, which means that they cannot be used in a calculation designed to preserve the relationship between retail subscription prices and license fees as Dr. Rubinfeld assumes should be done.
97. Second, Dr. Rubinfeld’s two calculations are based on different sets of features. He uses all of the features of interactive and non-interactive services when calculating an interactivity adjustment based on willingness to pay. Of course, consumers will not pay for features they can get for free. Therefore, the subscription prices measure the value of only those features not available for free in the marketplace.
98. Figure 10 illustrates Dr. Rubinfeld’s calculation of the interactivity adjustment from the average willingness to pay for different streaming features estimated by Dr. McFadden. Dr. Rubinfeld assumes that a subscription statutory service, such as Pandora One, has no advertisements, playlists from algorithm and tastemakers, a mobile service, and a song library of 10 million songs. The total average willingness to pay for this bundle of

¹¹² Rubinfeld, ¶ 171.

¹¹³ Rubinfeld, ¶ 169.

features based on Dr. McFadden's estimates is ~~\$4.50~~\$4.51.¹¹⁴ Dr. Rubinfeld assumes that a premium on-demand service includes no advertisements, playlists from algorithm and tastemakers, and a mobile service, just as the statutory service does. In addition, the on-demand service includes a library of more than 20 million songs (rather than 10 million), on-demand on the desktop and on mobile, offline listening, and unlimited skips. The total average willingness to pay for this on-demand service based on Dr. McFadden's estimates is \$8.57.¹¹⁵

Figure 10
Dr. Rubinfeld's Analysis of Consumer's Willingness to Pay
All Respondents, Weighted by U.S Future Users



Source: Rubinfeld, Exhibit 14.

99. The ratio of the average willingness to pay for the bundle of features Dr. Rubinfeld defines as his on-demand service relative to the bundle of features Dr. Rubinfeld defines as his statutory service is \$8.57 divided by \$4.51, which is equal to 1.9. As noted, Dr. Rubinfeld claims this calculation indicates that his “interactivity adjustment” of 2 is conservative because an “interactivity adjustment” of 1.9 would lead to a smaller

¹¹⁴ Rubinfeld, Exhibit 14.

¹¹⁵ Rubinfeld, Exhibit 14.

downward adjustment of the non-statutory license fees he uses as benchmarks than the adjustment he actually uses.¹¹⁶

100. In fact, Dr. Rubinfeld's two calculations using prices and willingness to pay are unrelated. This is easily seen in an example illustrating Dr. Rubinfeld's adjustment of his benchmark license rates. Dr. Rubinfeld assumes that the "the ratio of the average retail subscription price to the per-subscriber royalty paid by the licensee to the record label is approximately the same in both non-interactive and interactive markets."¹¹⁷ This means, for example, that if interactive license fees are 40% of interactive retail subscription fees, then statutory (non-interactive) license fees should be 40% of statutory (non-interactive) retail subscription fees. The arithmetic of his "interactivity adjustment" is straightforward. If the ratio of interactive subscription fees to statutory subscription fees is about 2, dividing interactive license fees by 2 yields a statutory license fee that will be in the same proportion to statutory subscription fees as interactive license fees are to interactive subscription fees.¹¹⁸
101. I do not endorse Dr. Rubinfeld's calculation, but it is straightforward to see that if the ratio of retail subscription prices to license fees is to be the same in the interactive and statutory marketplaces, a ratio of *prices* is what is needed to do the necessary arithmetic.
102. It is also straightforward to see that the estimates of the average willingness to pay have nothing to do with the retail subscription prices of music services. This is most easily seen in Figure 10 above, which recreates Dr. Rubinfeld's Exhibit 14. The average willingness to pay for an interactive service (derived from Dr. McFadden's survey) is \$8.57 according to Dr. Rubinfeld. This is lower than the average price of an interactive service, which he calculates to be \$9.86 per month.¹¹⁹ An individual with the average willingness to pay for an interactive subscription service that Dr. Rubinfeld calculates would not buy the service at the average price. In fact, no one would buy the vast majority of interactive subscription services, most of which have a subscription price of \$9.99 per month or higher. Similarly, Dr. Rubinfeld calculates that the average subscription price for a statutory service is between \$4.84 and \$5.27 per month. In either case, this amount is ~~below~~^{above} the average willingness to pay for a statutory service of \$4.51 per month. This example illustrates that there is simply no economic relationship between the average willingness to pay estimated by Dr. McFadden (and added up by Dr. Rubinfeld) and the price of the services offered in the marketplace.

¹¹⁶ Rubinfeld ¶ 171.

¹¹⁷ Rubinfeld, ¶ 169

¹¹⁸ For example, if the interactive subscription fee is \$10, the interactive license fee per user is \$4, and the non-interactive statutory subscription fee is \$5, the ratio of the interactive license fee to the interactive subscription price is 40% ($\$4/\$10=40\%$) and Dr. Rubinfeld's "interactivity adjustment" is 2 ($\$10/\$5=2$). If the \$4 interactive license fee is divided by the interactivity adjustment, the implied license fee for non-interactive statutory services is \$2 ($\$4/2=\2). The resulting non-interactive license fee is 40% of the non-interactive subscription fee of \$5 ($\$2/\$5=40\%$).

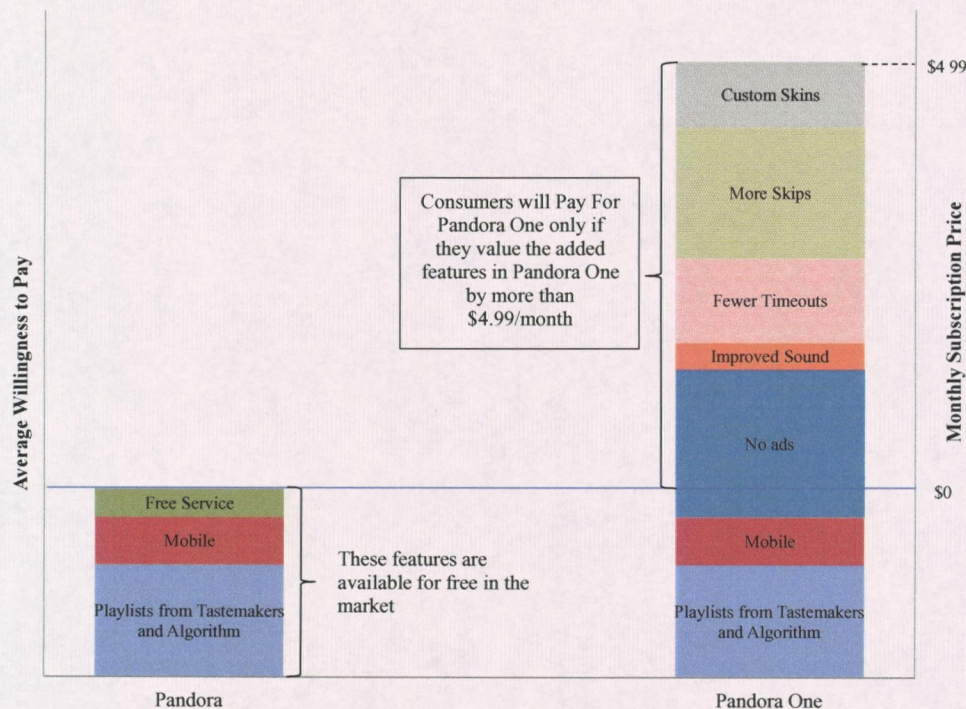
¹¹⁹ Rubinfeld, Exhibit 5.

103. In short, Dr. Rubinfeld intends for the ratios of subscription prices to license fees to be the same in the interactive and non-interactive markets.¹²⁰ However, there is no relationship between the average willingness to pay for the features included in a service and the market price of that service. Therefore, no calculation using estimates of average willingness to pay will preserve the relationship Dr. Rubinfeld uses to develop his proposed statutory rates.
104. Dr. Rubinfeld's use of the average willingness to pay to support his "interactivity adjustment" suffers from another flaw. Many of the features used to build up the estimate of the average willingness to pay for his hypothetical interactive and statutory services are available for free in the marketplace. Of course, consumers will not pay for all of the features of a service when they can get many for free. When deciding to buy a subscription service rather than a free-to-the-user service, the consumer makes her choice based on whether the features included in the subscription service and not included in the free service (*i.e.*, the extras obtained from the subscription service) are worth the subscription fee.
105. The implication of consumer behavior is that the estimates of the average willingness to pay that Dr. Rubinfeld calculates in Figure 10 include the value of features that consumers will not be willing to pay for in the marketplace. As a result, the features that Dr. Rubinfeld uses to estimate the ratio of the average willingness to pay for an interactive subscription service and a statutory non-interactive service are not the same features that consumers evaluate when deciding to buy a subscription service or to use a free-to-the-user service. In addition, some of the features that are relevant to the choice of whether to buy a subscription service are not addressed in Dr. McFadden's study.
106. The following example illustrates this point.
107. Figure 11 illustrates a consumer's decision regarding whether to sign up for the premium statutory service Pandora One under the assumption that the next best choice is Pandora's ad-supported service. The left-hand bar in Figure 11 shows the features offered by Pandora's ad-supported service that are included in Dr. McFadden's survey analysis. The market price to the user of this service is \$0 - it is free to the user. The right-hand bar shows the features of Pandora One. It includes the features of "Pandora," with the exception that it is not a "free service." In addition, Pandora One offers no ads, improved sound quality, fewer timeouts, more (but not unlimited) skips, and custom skins.¹²¹ Of course a consumer will make an incremental expenditure on a music service only if she values the additional features more than the additional expenditure necessary to obtain them. Thus, the consumer is paying a subscription fee of \$4.99 per month to obtain the features included in Pandora One less the features included in ad-supported Pandora. The subscription fee does not provide any indication of her willingness to pay for the features that she could obtain for free in the marketplace.

¹²⁰ Rubinfeld, ¶ 169.

¹²¹ See <http://www.pandora.com/one> (accessed February 22, 2015).

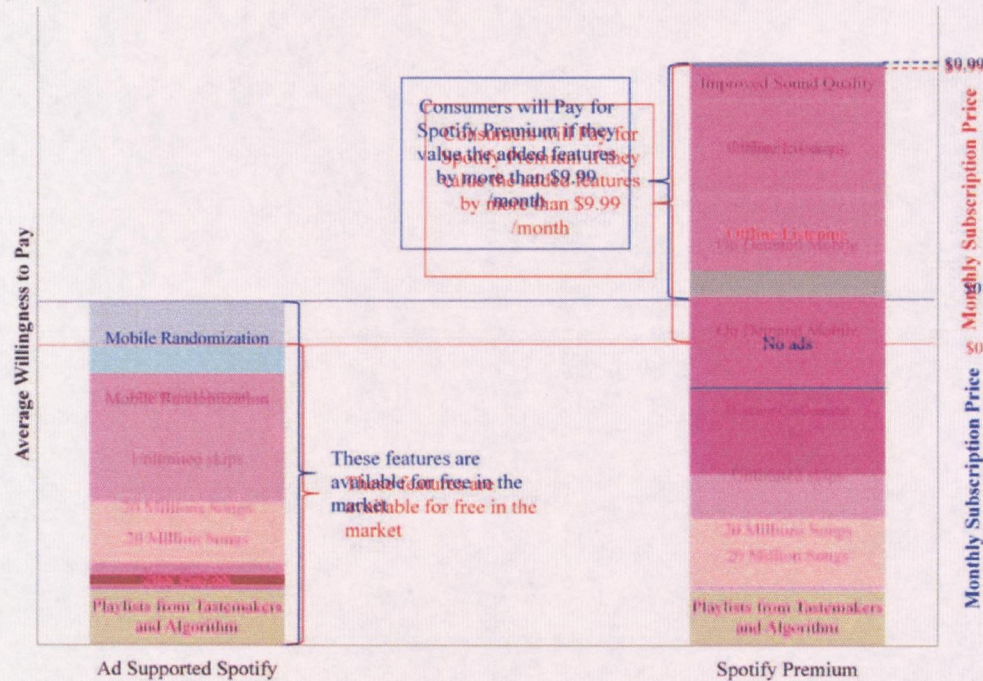
Figure 11
Consumers Pay for Features that Are Not Available for Free in the Market



108. A consumer making the decision to subscribe to the premium Spotify service must make the same type of choice. Figure 12 illustrates a hypothetical consumer choice for deciding between ad-supported Spotify and premium Spotify. A free option, such as ad-supported Spotify may be the consumer's second-best alternative to choosing to subscribe to premium Spotify for \$9.99 per month. Once again the consumer will pay a subscription fee only if he values the features not available for free in the marketplace by more than the subscription fee. In this case, the consumer will subscribe to Spotify Premium if he values improved sound, ~~unlimited skips~~, offline listening, on-demand mobile rather than randomized mobile, no ads, and the loss of having a free service by more than \$9.99 per month.¹²²

¹²² <https://www.spotify.com/us/premium/> (accessed February 22, 2015).

Figure 12
Consumers Pay for Features that Are Not Available for Free in the Market
 (Modified)



109. Figure 13 compares the features that Dr. Rubinfeld uses to calculate the “interactivity adjustment” based on subscription prices and willingness to pay. The figure illustrates that the two “interactivity adjustments” are based on the values of different sets of features in this example. When choosing to buy a subscription service, consumers consider the value of the “extra features” that are not available in free services. These features are shown in the top row of Figure 13 for the choices involved in the above example. In Dr. Rubinfeld’s calculation based on estimates of average willingness to pay, however, he includes all features of the services, whether they are available for free in the marketplace or not. As the figure shows, the sets of features relevant to the consumers’ choices to subscribe are not the same as the features Dr. Rubinfeld uses when estimating the relative willingness to pay for an interactive and non-interactive service. Of course, if consumers consider a different set of features when deciding which music service to buy than Dr. Rubinfeld used to calculate an “interactivity adjustment” based on estimates of average willingness to pay, there is no reason that the two calculations will agree except by chance.¹²³ The example also illustrates that some of the features that are relevant to consumers’ choices, such as improved sound quality, are not included in Dr. McFadden’s analysis.

123

In general, consumers choose the product that gives the greatest surplus from the products available in the marketplace. This does not affect the conclusion that no matter how a consumer ranks her choices, the features relevant to the decision to subscribe or not subscribe to a particular service will not be the same as those Dr. Rubinfeld uses to estimate an “interactivity adjustment” based on Dr. McFadden’s analysis.

Figure 13
Comparison of Features Valued by Dr. Rubinfeld's Calculations of the "Interactivity Adjustment"

	<u>Statutory Service</u>	<u>On-Demand Service</u>
	<u>Pandora One v. Pandora's Free Service</u>	<u>Spotify Premium v. Ad-Supported Spotify</u>
<i>Rubinfeld's Calculations Based on Subscription Prices</i>	No Advertising less Free Service Fewer Timeouts More Skips Custom Skins Improved Sound Quality (192 kbps)	No Advertising less Free Service On-Demand Mobile Service less Mobile Randomization Offline Listening Improved Sound Quality (320 kbps)
	<u>Statutory Subscription Service v. McFadden's Baseline Service</u>	<u>Non-Statutory Subscription Service v. McFadden's Baseline Service</u>
<i>Rubinfeld's Calculations Based on Dr. McFadden's Estimates of Average WTP</i>	Catalog from 1M to 10M Songs No Advertising Playlists from Algorithm and Tastemakers Mobile Service	Catalog from 1M to 20M+ Songs No Advertising Playlists from Algorithm and Tastemakers Mobile Service On-Demand Mobile and Desktop Offline Listening Unlimited Skips

110. Dr. Rubinfeld's attempt to use Dr. McFadden's estimates of the average willingness to pay for features of streaming services is incorrect. Dr. Rubinfeld's primary assumption regarding the adjustment of interactive license fees to estimate statutory license fees depends on the ratio of interactive and statutory subscription fees and interactive and statutory license fees. Estimates of the average willingness to pay do not have any economic relationship to the market prices his adjustment demands. There is no reason that replacing prices with estimates of the average willingness to pay in his "interactivity adjustment" will preserve the ratios of subscription prices to license fees as he assumes should be done. In addition, Dr. Rubinfeld's use of Dr. McFadden's estimates of willingness to pay for features to support his calculation of an "interactivity adjustment" fails to account for the fact that consumers will not pay for features that they can get in the marketplace for free. Thus, Dr. Rubinfeld's calculation using estimates of average willingness to pay from Dr. McFadden's survey are economically meaningless.

CERTIFICATE OF SERVICE

I hereby certify that on March 24, 2015, I caused copies of the foregoing document to be served via email on the following parties, which have consented to email service:

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